IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

VB Assets, LLC, Plaintiff, v. Amazon.com, Inc.; Amazon.com LLC; Amazon Web Services, Inc.; A2Z Development Center, Inc. d/b/a Lab126; Rawles LLC; AMZN Mobile LLC; AMZN Mobile 2 LLC; Amazon.com Services, Inc. f/k/a Amazon Fulfillment Services, Inc.; and Amazon Digital Services LLC, Defendants.	**C.A. No. 1:19-cv-01410-MN** **JURY TRIAL DEMANDED**

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

VB Assets, LLC ("Plaintiff" or "VoiceBox") hereby alleges as follows for its First Amended Complaint against Defendants Amazon.com, Inc.; Amazon.com LLC; Amazon Web Services, Inc.; A2Z Development Center, Inc. d/b/a Lab126; Rawles LLC; AMZN Mobile LLC; AMZN Mobile 2 LLC; Amazon.com Services, Inc. f/k/a Amazon Fulfillment Services, Inc.; and Amazon Digital Services LLC (collectively, "Defendants" or "Amazon"):

NATURE OF THE ACTION

1. VoiceBox, through its predecessor companies VoiceBox Technologies Corporation and VoiceBox Technologies, Inc. (collectively "VoiceBox Technologies"), pioneered voice-based search and commerce technology. It invented what Amazon itself has described as "Echo-like" products long before Amazon.

2. In recognition of its many innovations, the U.S. Patent & Trademark Office awarded and issued the VoiceBox Patents.[1] The innovations in these patents were fundamental to the development of voice commerce technology.

3. VoiceBox Technologies' opportunities to promote and build a business based on these patents were crushed when Amazon introduced the infringing Echo and Alexa Products[2] and used its enormous size and clout to poach dozens of VoiceBox Technologies' engineers and scientists.

4. VoiceBox has brought this case to hold Amazon accountable for its infringement of VoiceBox's patent rights.

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[1] "VoiceBox Patents" collectively refers to U.S. Patent Nos. 8,073,681 ("the '681 patent"); 9,015,049 ("the '049 patent"); 9,626,703 ("the '703 patent"); 7,818,176 ("the '176 patent"); 8,886,536 ("the '536 patent"); and 9,269,097 ("the '097 patent").

[2] "Alexa Products" collectively refers to Amazon's Alexa virtual assistant and offerings that include Alexa, including the Echo product line (such as Echo 1st Gen., Echo 2nd Gen., Echo Dot 1st Gen., Echo Dot 2nd Gen., Echo Dot 3rd Gen., Echo Dot Kids Edition, Echo Show 1st Gen., Echo Show 2nd Gen., Echo Show 5, Echo Spot, Echo Plus 1st Gen., Echo Plus 2nd Gen., Echo Auto, and Echo Look), Amazon's Alexa apps, Music apps, and Shopping apps on a smartphone or other mobile device, Amazon's Alexa cloud, Alexa Voice Services, and Amazon.com website, and any other device, app, or instrumentality that includes, provides access to, or works with Alexa (such as Amazon Tap, Amazon Dash Wand, Echo Wall Clock, AmazonBasics Microwave, Amazon SmartPlug, Amazon Fire TV Sticks, Amazon Fire TVs, Amazon Fire TV Cubes, and Amazon Fire and Fire HD tablets) as well as software, hardware, and cloud infrastructure associated with any of the foregoing. Plaintiff reserves the right to expand upon or otherwise modify the above list during the discovery process in this case and is in no way limiting the scope of the accused products to what is currently listed.

THE PARTIES

5. VB Assets, LLC, VoiceBox, is a limited liability company organized under the laws of Delaware and has its principal place of business at 1229A 120th Ave. NE, Bellevue, WA 98005.

6. On information and belief, Amazon.com, Inc. is a corporation incorporated in Delaware and has a principal place of business at 410 Terry Avenue North, Seattle, WA, 98109. On information and belief, Amazon.com, Inc. is the ultimate parent company of the other companies that make up Amazon, and is responsible for making, using, selling, offering for sale and/or importing Alexa Products.

7. On information and belief, Amazon.com LLC is a limited liability company organized under the laws of Delaware and has a principal place of business at 410 Terry Avenue North, Seattle, WA, 98109. On information and belief, Amazon.com LLC includes as members various operating companies, which make, use, sell, offer for sale, and/or import Alexa Products.

8. On information and belief, Amazon Web Services, Inc. is a corporation incorporated in Delaware and has a principal place of business at 410 Terry Avenue North, Seattle, WA, 98109. On information and belief, Amazon Web Services, Inc. provides Alexa cloud computing platforms, that are Alexa Products or are for use with one or more Alexa Products.

9. On information and belief, A2Z Development Center, Inc. d/b/a Lab126 is a corporation incorporated in Delaware and has its principal place of business at 1120 Enterprise Way Sunnyvale, CA 94089. On information and belief, A2Z Development Center, Inc. d/b/a Lab126 performed research and development, including for one or more Alexa Products.

10. On information and belief, Rawles LLC is a limited liability company formed under the laws of Delaware and has its principal place of business at 103 Foulk Road, Suite 100,

Wilmington, DE 19803. On information and belief, Rawles LLC performed research and development, including for one or more Alexa Products.

11. On information and belief, AMZN Mobile LLC is a limited liability company organized under the laws of Delaware and has a principal place of business near Seattle, WA. On information and belief, AMZN Mobile LLC provides mobile apps that are Alexa Products or are for use with Alexa Products.

12. On information and belief, AMZN Mobile 2 LLC is a limited liability company organized under the laws of Delaware and has a principal place of business near Seattle, WA. On information and belief, AMZN Mobile 2 LLC provides mobile apps that are Alexa Products or are for use with Alexa Products.

13. On information and belief, Amazon.com Services, Inc. f/k/a Amazon Fulfillment Services, Inc. is a corporation incorporated in Delaware and has a principal place of business at 410 Terry Ave. N. Seattle, WA 98109. On information and belief, Amazon.com Services, Inc. f/k/a Amazon Fulfillment Services, Inc. participated in the sale or offer for sale of one or more Alexa Products.

14. On information and belief, Amazon Digital Services LLC is a limited liability company organized under the laws of Delaware and has a principal place of business at 410 Terry Ave. N, Seattle, WA 98109. On information and belief, Amazon Digital Services LLC has participated in the sale or offer for sale of one or more Alexa Products and/or has provided digital services and content for use by Alexa Products.

JURISDICTION AND VENUE

15. This Court has original jurisdiction over the subject matter of this action under 28 U.S.C. §§ 1331 and 1338(a) because the action arises under the patent laws of the United States.

16. Personal jurisdiction over each Defendant is proper in this District based on one or more of the following: its presence in this judicial district; it has availed itself of the rights and benefits of the laws of Delaware; or it has derived substantial revenue from sales of Alexa Products in Delaware and it has systematic and continuous business contacts with Delaware. Each Defendant was incorporated in Delaware and/or formed under the laws of Delaware and Amazon designs Alexa Products, which are advertised, offered for sale, sold, and used in Delaware.

17. Venue is proper in this district under 28 U.S.C. § 1400(b) and 28 U.S.C. §§ 1391(b)(1), (b)(2). For purposes of § 1400(b), each Defendant was incorporated in Delaware and/or formed under the laws of Delaware and therefore resides within this District. For purposes of § 1391(b)(1), (b)(2), Amazon resides in the District of Delaware by virtue of being incorporated in Delaware and/or formed under the laws of Delaware.

FACTUAL BACKGROUND

A. VoiceBox Technologies Invents Groundbreaking Voice Technology

18. In 2001, three brothers, Mike, Rich, and Bob Kennewick founded VoiceBox Technologies to bring natural language understanding ("NLU") to a wide array of computer applications. They recognized that the typical computer speech-recognition systems forced human operators to adhere to a limited number of rigid speech prompts, typically through verbal menus of a so-called "Command and Control" system. These rigid prompts limited how systems were used and inhibited the widespread adoption of speech-recognition systems. The brothers believed that VoiceBox Technologies could become the first company to improve voice recognition systems to enable people to naturally and effectively interact with computer speech systems.

19. From its inception, VoiceBox Technologies engaged in intense research efforts to develop its NLU technology. As part of these efforts, VoiceBox Technologies achieved a significant milestone when it developed an early prototype called "Cybermind." As demonstrated on the local Seattle-area television news (called King5 news), Cybermind was a voice-controlled speaker that could provide weather, recipes, sports scores, calendar updates, or play a song.[3]

Figure 1: Cybermind Prototype

20. VoiceBox Technologies' groundbreaking work did not go unrecognized. After learning about VoiceBox Technologies' technology, Toyota hired it to build a sophisticated NLU speech interface for its Lexus automobiles. VoiceBox Technologies built the voice and NLU capability for Toyota's award-winning Entune multimedia system.

21. As part of the development effort of an NLU interface for Lexus, VoiceBox Technologies demonstrated a personal assistant called "Alexus" that showcased the power of its Conversational Voice technology. On information and belief, the VoiceBox Technologies

[3] https://www.youtube.com/watch?v=DDcRyPnvWhw

"Alexus" concept was introduced to the public more than six months before Amazon announced "Alexa."

Figure 2: "Alexus" Demonstration

22. Throughout its research and development efforts, VoiceBox Technologies realized that its technology could be deployed in a wide range of applications from connected home to mobile personal assistants.

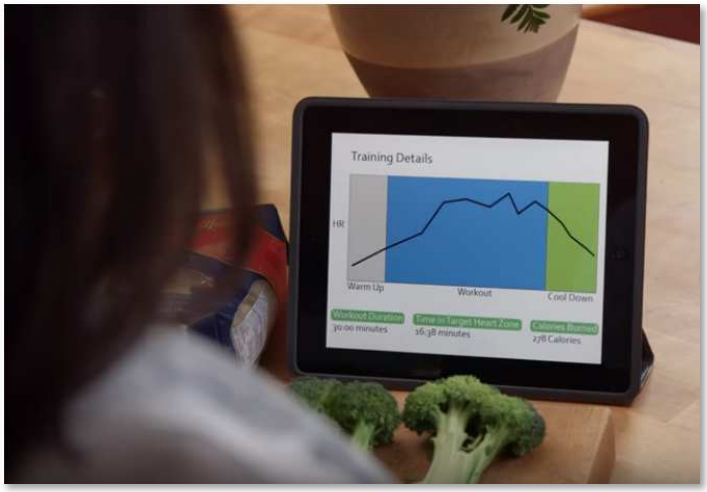

Figure 3: Connected Home

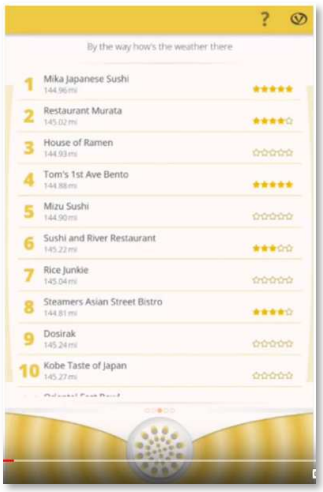

Figure 4: Mobile

23. By January 2012, VoiceBox Technologies was a leader in NLU and conversational voice technology. Leading companies throughout the world, including Toyota, Lexus, TomTom, Pioneer, Chrysler, Dodge, and Magellan used VoiceBox Technologies' award-

winning and patented contextual speech technology. VoiceBox Technologies had software applications that ran on smart speakers, in-car systems, smartphones, smart TVs, computers, tablets, e-readers, and personal navigation devices.

24. In 2013, the Institute of Electrical and Electronics Engineers ("IEEE") ranked VoiceBox Technologies number 13 in patent power for the computer software industry. VoiceBox Technologies had become the leader in conversational Artificial Intelligence ("AI"), including Voice Recognition (VR), NLU, and AI services.

B. Amazon Takes VoiceBox's Technology

25. In 2011, VoiceBox Technologies contacted Amazon to explore a potential business relationship where VoiceBox Technologies would provide core NLU services to Amazon. Amazon's corporate development department expressed interest and asked for "company and/or product overview slides" to facilitate an October 7, 2011 teleconference. In response, VoiceBox Technologies provided Amazon with a presentation that described its award-winning patented technology and explicitly referred to VoiceBox Technologies' "patented Contextual Speech Technology." Slides from that presentation are reproduced below:

Figure 5: 2011 Slides

26. Amazon was so impressed by the technology VoiceBox Technologies presented on October 7, 2011 that its representative emailed VoiceBox Technologies the next business day to invite VoiceBox to visit Amazon's offices on October 19, 2011. That meeting was with Douglas Booms, Amazon's Vice President of Worldwide Corporate Development, as well as engineers and product/business development members of Amazon's devices and digital teams. The email from Amazon stated that this was "the right audience to discuss [VoiceBox Technologies'] personal digital assistant and underlying conversational voice technology." On information and belief, in addition to Mr. Booms, the following Amazon personnel attended the meeting: Nick Komorous (Director, Corporate Development), Ian Freed (VP, Amazon Devices), Greg Hart (VP, Digital), Al Lindsay (Director, Software Engineer), Frederic Deramat (Senior Principal Engineer), and John Thimsen (Software Developer). On information and belief, another Amazon engineer from Cupertino attended by teleconference.

27. Two days after the meeting at Amazon, on Friday October 21, 2011, Amazon's Mr. Komorous emailed VoiceBox Technologies and asked to visit the company's office for a "deeper dive." Mr. Komorous requested that this meeting occur the very next week. VoiceBox Technologies agreed to host Amazon's personnel for a meeting at VoiceBox Technologies' office on October 26, 2011. On information and belief, from Amazon, Marcello Typrin (Product Management / Business Development), Frederic Deramat (Senior Principal Engineer), John Thimsen (Software Developer), and Sean Fitz (Software Developer) joined Mr. Komorous at the meeting.

28. In advance of the meeting, Mr. Komorous sent a detailed set of technical questions that would help Amazon's "tech team understand the scope and [r]ange of things [Amazon] can try to tackle with VoiceBox[] as a partner." Mr. Komorous also indicated that

Amazon's culture was "engineering heavy" and asked that VoiceBox Technologies "have engineering and speech representation at the meeting."

29. The October 26, 2011 meeting at VoiceBox Technologies' office ran from 10 am until 12 noon with some Amazon engineers staying even later until around 2:30 pm. The meeting included a tour with additional demos, a review of the technical architecture for VoiceBox Technologies' server software, and plans for next generation products.

30. During the meeting, VoiceBox Technologies presented a deck of 42 slides to the visiting Amazon personnel. The slides provided even more detail about VoiceBox Technologies' patented technology and informed Amazon that VoiceBox Technologies had 12 patents at the time with an additional 14 pending applications. The slide deck included the following slide regarding the '176 patent, which is asserted in this lawsuit.

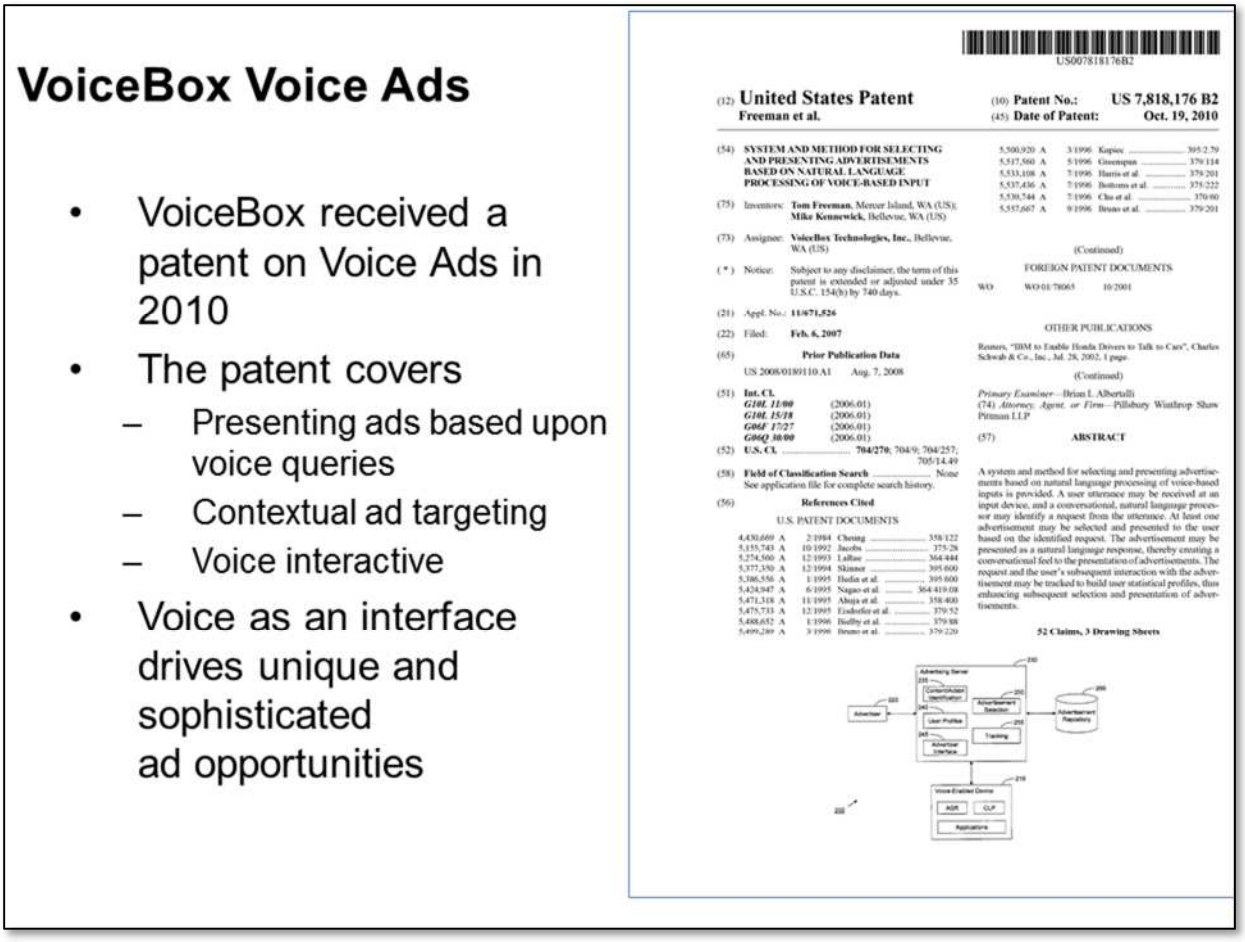

Figure 6: Slide from 2011 Presentation

31. The slide deck VoiceBox Technologies presented to Amazon at the October 26, 2011 meeting also proposed a business arrangement where VoiceBox Technologies would provide "Voice Services" to Amazon. The VoiceBox Technologies Voice Services from the presentation are shown below:

Figure 7: Slide from 2011 Presentation

32. On information and belief, some of the Amazon personnel involved in the 2011 meetings became technical leaders for Amazon's Alexa Products while others became high-level executives with close working relationships with the senior leadership of Amazon. On information and belief, one of Mr. Freed's past positions was Technical Advisor to CEO, a position that has been described as CEO Jeff Bezos's "shadow" advisor. On information and belief, Mr. Freed then went on to become Vice President, Amazon Devices where he led a team of engineers working on Amazon's Alexa Products. On information and belief, Mr. Hart has also been Mr. Bezos's "shadow" advisor—he held the Technical Advisor to CEO position around 2011. On information and belief, around 2011, Al Lindsey was promoted to Vice President

managing the Alexa Engine Software team. On information and belief, around 2011, Mr. Deramat was promoted to the position Vice President & Distinguished Engineer for Amazon Alexa. On information and belief, around 2011, Mr. Thimsen was promoted to the position Director of Engineering for Amazon Echo. As for Mr. Typrin, he states on his LinkedIn page that he is "[o]ne of the founding members of the team that shaped the vision and direction for Amazon's Echo and Alexa Voice Services."

33. A couple days after the last meeting in 2011, VoiceBox Technologies sent an email to Amazon asking for Amazon's feedback. Mr. Komorous from Amazon replied that Amazon was "still discussing internally how contextual speech / cybermind 2012 could play a part in [Amazon's] future." Amazon did not provide the results of these discussions and did not pursue a business relationship with VoiceBox Technologies. Instead, on information and belief, Amazon decided to build its Alexa Products—without telling VoiceBox Technologies or asking permission to use VoiceBox Technologies' patented technology.

34. In 2014, Amazon announced the launch of Alexa, a virtual assistant, along with the first-generation Echo product, a smart speaker. Amazon's Alexa and first-generation Echo product were strikingly similar to the patented technology that VoiceBox Technologies showed Amazon in 2011.

35. In 2016, Amazon abruptly hired Philippe Di Cristo, who was VoiceBox Technologies' Chief Scientist. While at VoiceBox Technologies, Mr. Di Cristo gained knowledge of the company's voice technology and had full access to VoiceBox Technologies' intellectual property. As Mr. Di Cristo explains on his LinkedIn Page, he had worked on an "Amazon Echo-like system" while at VoiceBox Technologies. Exhibit A at 3. On information and belief, Mr. Di

Cristo has helped design and implement VoiceBox Technologies' patented technology into Amazon's Echo and other Alexa Products.

36. On information and belief, Mr. Di Cristo played an active role in soliciting additional VoiceBox employees to join Amazon. For example, shortly after Mr. Di Cristo joined Amazon from VoiceBox Technologies, Amazon ramped-up its efforts to recruit VoiceBox Technologies employees.

37. On January 10, 2017, Amazon hosted an "Evening with the Leadership of Amazon Voice & Advanced Shopping," which Amazon expressly described as an "invite only networking event for Voice Box employees . . . to talk . . . about opportunities at Amazon." The director of Amazon's Voice & Advanced NUI Shopping group— on information and belief, the group Mr. Di Cristo joined—sent an invite for the event to a large number of VoiceBox Technologies employees and indicated that Amazon was "building a world-class speech & NLU engineering team" and "[y]our profile looks quite relevant and we'd love to talk to you and see if there's a fit." For this event, Amazon rented out Seastar, the premier seafood restaurant near VoiceBox Technologies' office.

38. On information and belief, Mr. Di Cristo was originally scheduled to be a speaker at the event targeting VoiceBox Technologies employees—but abruptly withdrew. The event emphasized Amazon's need for VoiceBox Technologies' NLU technology. On information and belief, around this time, Amazon faced numerous NLU challenges and had only completed a small portion of work toward Amazon's goal to build conversational dialog interaction into Alexa Products.

39. On January 17, 2017, after Amazon's rampant poaching of VoiceBox Technologies employees came to light, Mike Kennewick, CEO of VoiceBox Technologies, sent a

letter to Jeff Bezos, CEO of Amazon, to propose a business solution. A true and correct copy of that letter is attached as Exhibit B. The letter explains that, at the time, VoiceBox Technologies had "a deep portfolio of technology and IP, including a large number of significant patents not only in NLU but also in Voice[]Commerce, running on over 200 million devices."

40. On information and belief, Mr. Booms, Amazon's Vice President of Worldwide Corporate Development, responded to VoiceBox Technologies' January 17, 2017 letter on behalf of Mr. Bezos. In Amazon's response, Mr. Booms requested a meeting at VoiceBox Technologies' offices for purposes of "go[ing] fairly deep on the technology, data, customer relationships."

41. On February 2, 2017, the parties met at VoiceBox Technologies' office. Amazon came with a team of technologists from its Alexa program, including on information and belief, Manoj Sindhwani (Director Alexa), Karthik Ramakrishnan (Senior Manager, Alexa software), Nikko Strom (Scientist, Alexa), and Deepesh Mohnani (Alexa Voice Services Product Management) joined by Mr. Booms. VoiceBox Technologies provided a detailed technical presentation, which included information about patents and pending applications then owned by VoiceBox Technologies. Slides in the presentation listed all VoiceBox Technologies patents and published applications at the time, including the '681 patent, the '049 patent, the '176 patent, the '536 patent, and the '097 patent. The February 2, 2017 slides also reproduced a highlighted claim from the '681 patent and a highlighted claim from the '176 patent.

42. Following the meeting, Mr. Booms emailed VoiceBox Technologies to request even more technical details. Then, on February 20, 2017, Amazon specifically asked VoiceBox Technologies for a list of all patents owned by the company.

43. In March of 2017, VoiceBox Technologies hosted another meeting with Amazon personnel at VoiceBox Technologies' office. The Amazon attendees included senior executives

and managers responsible for Alexa. VoiceBox Technologies informed Amazon by email after the meeting that VoiceBox Technologies had "[p]atents that could be useful as the market goes mainstream." Shortly, thereafter, Mr. Komorous from Amazon emailed VoiceBox Technologies, writing that Amazon had been "[poring] through the material" VoiceBox Technologies provided and that Amazon had created yet another, even more detailed, list of requests.

44. In April of 2017, VoiceBox Technologies shared a written summary of VoiceBox Technologies' patent portfolio with Amazon. The written summary explained that VoiceBox Technologies' patents covered "core & fundamental areas." The summary showcased the '176 patent and the '703 patent, and identified the '536 patent and '097 patent by number. The summary further explained that "[v]oice advertising & conversational e-commerce are essential to the core strategies and future revenue streams of many of the world's leading technology companies, including: . . . Amazon . . . ."

OVERVIEW OF VOICEBOX'S PATENTS-IN-SUIT

The '681 and '049 Patents

45. United States Patent Number 8,073,681 ("the '681 patent"), entitled "System and Method for a Cooperative Conversational Voice User Interface," was duly and legally issued on December 6, 2011, and names Larry Baldwin, Tom Freeman, Michael Tjalve, Blane Ebersold, and Chris Weider as the inventors. Attached as Exhibit C is a true and correct copy of the '681 patent.

46. The '681 patent claims, among other things, a system for providing a cooperative conversational voice user interface, comprising: a voice input device configured to receive an utterance during a current conversation with a user; and a conversational speech engine, wherein the conversational speech engine includes one or more processors configured to: accumulate

short-term shared knowledge about the current conversation, wherein the short-term shared knowledge includes knowledge about the utterance received during the current conversation; accumulate long-term shared knowledge about the user, wherein the long-term shared knowledge includes knowledge about one or more past conversations with the user; identify a context associated with the utterance from the short-term shared knowledge and the long-term shared knowledge; infer additional information about the utterance from the short-term shared knowledge and the long-term shared knowledge in response to determining that the utterance contains insufficient information to complete a request in the identified context; establish an intended meaning for the utterance within the identified identify a context based on the additional information inferred about the utterance; and generate a response to the utterance based on the intended meaning established within the identified context.

47. VoiceBox is the assignee of the entire right, title, and interest in the ’681 patent.

48. United States Patent Number 9,015,049 (“the ’049 patent”), entitled “System and Method for a Cooperative Conversational Voice User Interface,” was duly and legally issued on April 21, 2015, and names Larry Baldwin, Tom Freeman, Michael Tjalve, Blane Ebersold, and Chris Weider as the inventors. Attached as Exhibit E is a true and correct copy of the ’049 patent.

49. The ’049 patent claims, among other things, a system for facilitating conversation-based responses, the system comprising: one or more physical processors programmed with one or more computer program instructions such that, when executed, the one or more computer program instructions cause the one or more physical processors to: receive a natural language utterance during a conversation between a user and the system; identify a first model that includes short-term knowledge about the conversation, wherein the short-term knowledge is based on one or more prior natural language utterances received during the

conversation; identify, based on the short-term knowledge, context information for the natural language utterance; determine, based on the context information, an interpretation of the natural language utterance; and generate, based on the interpretation of the natural language utterance, a response to the natural language utterance.

50. VoiceBox is the assignee of the entire right, title, and interest in the ’049 patent.

51. Voice user interface systems in existence before the inventions of the ’681 and ’049 patents were typically of the “Command and Control” type. Such systems used verbal menus to restrict information that a person can provide at a given point. For example, the voice system would present the list of available options either verbally and/or on a screen. The user could then respond by speaking the menu item. Such a system could include numerous menus that the user would have to get through in order to convey the desired information to the system and/or to cause the system to take the desired action.

52. The inventors recognized a significant problem with the Command and Control systems in that users would have to memorize exact words and phrases in order to interact with the system. This required significant learning because the user had to know which words and phrases to use in order to make a request of a Command and Control voice user interface system. Additionally, the process of stepping through menus could be time-consuming and, in some cases might dissuade a user from utilizing the voice-based system.

53. To overcome the shortcoming of prior art systems, the inventors provided a solution that used an “Automatic Speech Recognizer” (or ASR) to generate a preliminary interpretation and provide that preliminary interpretation to a “conversational speech engine” for further processing. The conversational speech engine—which was not well-understood, routine, or conventional—could be implemented locally on a user device or remotely on a server. In

certain embodiments, the conversational speech engine included a conversational language processor, voice search engine / free form voice search module with context domain agents, and a context determination process. The conversational speech engine communicates with databases to generate an adaptive conversational response.

54. Through the use of a conversational speech engine, the ’681 and ’049 patents advantageously rely on conversational responses which, in some embodiments, use short-term and long-term shared knowledge about user utterances to determine a context for the request, infer additional information about a request, and provide an adaptive conversational response.

55. The inventors were thereby able to improve the functioning of voice user interface systems which improved the operation of those systems in an unconventional manner. For example, the innovations in the ’681 and ’049 patents allowed a user to converse naturally with a voice user interface system instead of “dumbing down” their requests to match the simple sets of instructions that existing Command and Control systems required. In this regard, one of the problems faced by the inventors was necessarily rooted in voice user interface technology specifically arising in the realm of voice user interface systems. Indeed, the commercial success and industry accolades provide objective evidence as to Voicebox’s innovative approach through the use unconventional technology.

56. The ’681 patent describes and claims a system for providing a cooperative conversational voice user interface with the above-described conversational speech engine. The conversational speech engine has a processor that accumulates both short-term and long-term shared knowledge. The short-term shared knowledge includes knowledge about an utterance received during a current conversation while the long-term shared knowledge includes knowledge about one or more past conversations with the user.

57. The known prior art in the field of voice user interfaces neither taught accumulating short-term and long-term shared knowledge nor expressed any appreciation for the substantial advantages associated with utilizing this shared knowledge for various purposes in a conversational speech engine. Such uses include to identify context, infer additional information about an utterance that contains insufficient information to complete a request, establish an intended meaning for an utterance within the context based on the additional information inferred about the utterance, and generate a response based on the intended meaning established within the identified context. In this regard, accumulating and using both short-term and long-term shared knowledge was not well-understood, routine, or conventional and stands in sharp contrast to the conventional and routine approach of command and control systems that require a user to use rigid menus to establish context before making a request.

58. During prosecution of the '681 patent, the examiner rejected numerous application claims as being unpatentable over Kargman (US 2005/0015256). In response, the inventors' prosecution counsel argued as follows:

> More particularly, Kargman fails to disclose, teach, or suggest at least the combination of features that include "receiving an utterance at a voice input device, wherein the voice input device receives the utterance in a current conversation with a user" and ***"determining an intended meaning for the utterance,"*** wherein a conversational speech engine determines the intended meaning for the utterance from short-term shared knowledge about the current conversation and long-term shared knowledge about the user, including one or more past conversations with the user, as recited in amended independent claim 1, for example. The Examiner alleges that Kargman teaches a system that can generate responses to utterances received from a user based on shared knowledge about a current conversation and/or one or more past conversations. Office Action, pages 6-8.

Applicants disagree with the Examiner's assessment for at least the reason that although Kargman generally describes a system that can "generate an initial or supplemental prompt which is individually tailored for [a] particular customer" and "tailor the voice recognition 'grammar' to that particular customer" based on the customer's order history (¶ [0050]), suggesting certain words or tailoring voice recognition components to improve the likelihood that a particular utterance will be correctly recognized does not fairly disclose, teach, or suggest determining an "intended meaning" for the utterance. In particular, Applicants' disclosure includes various passages that describe techniques that may be used to determine or otherwise establish an intended meaning for an utterance, including a conversational speech engine "that determines one or more contexts for a request to establish meaning within a conversation" (¶ [034]). For example, the word "traffic" may have distinct meanings in different contexts (e.g., the "Traffic" rock and roll band in a music context, the film "Traffic" in a movie context, road conditions in a navigation context, etc.) (¶ [034]).

In contrast, the passages in Kargman that the Examiner cites as allegedly teaching features that relate to determining an intended meaning for an utterance only generally relate to providing prompts to suggest certain choices or tailoring voice recognition grammars to prevent mismatches when recognizing an utterance from a user. However, pre-configuring a voice recognition system based on a history associated with a user does not disclose, teach, or suggest determining "an intended meaning" for what the user then says in an utterance. In other words, where amended independent claim 1 recites "determining ***an intended meaning for the utterance***" from short-term shared knowledge and long-term shared knowledge, the short-term shared knowledge and long-term shared knowledge provide "profiles [that] may be particularly meaningful when attempting to disambiguate between contexts where a word has different meanings in different contexts" (¶ [037]). On the other hand, the voice recognition techniques described in Kargman only relate to making statistical guesses or suggestions to avoid potential "mismatches," which does not disclose, teach, or suggest disambiguating, establishing, or otherwise determining the intended meaning that the user had in speaking any words recognized in the utterance.

> Accordingly, for at least the reason that Kargman does not describe or otherwise indicate that the system described therein can distinguish or otherwise determine an intended meaning underlying an utterance that a user speaks in a current conversation, much less determining an intended meaning for an utterance from short-term shared knowledge about the current conversation and long-term shared knowledge about past conversations with the user, Kargman fails to disclose, teach, or suggest at least the foregoing features recited in amended independent claim 1. The rejection is therefore improper and must be withdrawn.

59. Based, at least in part, on the inventors' arguments, the USPTO eventually granted the claims of the '681 patent finding them novel and non-obvious over Kargman and other cited references. As indicated, a key distinction—which the examiner eventually agreed with—is that Kargman lacked short-term shared knowledge about the current conversation and long-term shared knowledge about past conversations with the user. This was not well-understood, conventional, or routine to a person of ordinary skill in the art.

60. The '049 patent (which stems from the same original patent application as the '681 patent) describes and claims a system for facilitating conversational-based responses that uses processors programmed to identify a first model that includes short-term knowledge about the conversation, wherein the short-term knowledge is based on one or more prior natural language utterances received during the conversation. The system identifies context information for the natural language utterance based on the short-term knowledge and determines an interpretation of the natural language utterance based on the context information.

61. The known prior art in the field of voice user interfaces neither taught identifying a first model that includes short-term knowledge about the conversation nor expressed any appreciation for the substantial advantages associated with utilizing this model for various purposes in a conversational speech engine. Such uses include to identify context information, determine an interpretation of a natural language utterance, and generate a response. In this

regard, identifying a first model that includes short-term knowledge about the conversation was not well-understood, routine, or conventional and stands in sharp contrast to the conventional and routine approach of command and control systems that require a user to use rigid menus to establish context before making a request.

62. During prosecution of the ’049 patent, the examiner determined that numerous application claims were directed to allowable subject matter. According to the examiner:

> The prior art of record includes various utterances which teach determining context/topics/domains based on conversation/discourse/dialog history but does not teach where short-term knowledge is based on the conversation history data and where the short-term knowledge is included in a model (in combination with everything else in the independent claims).

63. Once again, the USPTO recognized that the prior art “does not teach where short-term knowledge is based on the conversation history data and where the short-term knowledge is included in a model.” Rather, this acknowledged advantage represents an inventive concept which was not well understood, conventional, or routine.

64. Thus, with respect to both the ’681 and ’049 patents, the inventors overcame problems with Command and Control systems such as menu driven dead-ends when a request is ambiguous. Such problems arose because the Command and Control systems attempted to assign meaning to every component of an utterance and provided no option for dialogue to satisfy mutual goals. This increased the error rate due to numerous potential meanings that could result from using all parts of an utterance. The inventions of the ’681 and ’049 patents allow a user to directly request what they want from the system in a normal, conversational fashion. The

invention's conversational speech engine and conversational-based responses allowed users to engage the systems in a productive, cooperative dialogue to resolve requests.

65. In this regard, one of the problems faced by the inventors was necessarily rooted in voice user interface technology specifically arising in the realm of voice user interface systems. In addition, the'681 and '049 patents ability to effectively process free-form conversational-style requests was not well-understood, routine, or conventional.

66. The inventors also realized that the Command and Control systems considered each utterance in isolation and were prone to repeatedly misinterpret human speech, even if such misinterpretation could be avoided based on knowledge of the user and/or the context for the speech. The innovative systems claimed in the '681 and '049 patents used shared knowledge based on previous utterances to identify a context and interpret the user's utterance in that context. In some embodiments the context could be used to infer a request based on a model of human speech or to infer an intended request from an incomplete or ambiguous request. Such systems advantageously allow rapid context switching in ways that are intuitive to the user

67. In this regard, another one of the problems faced by the inventors was necessarily rooted in voice user interface technology specifically arising in the realm of voice user interface systems. In addition, the'681 and '049 patents ability to identify context was not well-understood, routine, or conventional.

68. Therefore, as explained above, a skilled artisan would not consider the claim limitations of the '681 and '049 patents – either alone or in combination – to recite well-understood, routine, or conventional concepts. For example, "accumulating short-term shared knowledge about the current conversation" or "identifying … a first model that includes short-term knowledge about the conversation" was not well-understood, routine or conventional.

Indeed, the inventors specifically distinguished their invention from that of Kargmann, which the USPTO agreed lacked the "short-term shared knowledge" element.[4] This particular limitation represents a specific improvement of the voice-based system, which previously focused on Command and Control system which focused on menus.

69. In addition, the use of "populating a short-term context stack" ('681 patent, claim 3) was not routine, conventional, or well-understood. A context stack was generally unheard of in voice-based computer systems. Further, the concept of "classifying one or more of the utterance or the current conversation into a conversation type based on one or more of the identified conversational goal" ('681 patent, claim 5) was contrary to conventional wisdom which, at the time, focused on improving the usability of the menus and enhancing the overall speed of the Command and Control system. Moreover, the "conversational speech engine" ('681 patent, claim 5) represented a specific enhancement to the overall voice-based computerized system which could, among other things, establish an intended meaning based on the type of conversation. In contrast, the conventional approach was to focus on more accurately understanding particular words and narrowing the number of words likely to be spoken.

70. Further, "accumulating long-term shared knowledge about the user" including knowledge "about one or more past conversations with the user" or "context information" was not well-understood, routine or conventional. Rather, as explained above, a conventional approach was to direct the end-user to make utterances based on a defined list of potential utterances according to a Command and Control system. Such systems did not adapt based on

[4] Plaintiff does not concede that Kargmann or any reference discussed herein represented that which was well-understood, routine or conventional. Nor does Plaintiff concede that any discussed reference qualifies as prior art.

conversations with the users and/or other available information about the user or the context surroundings the conversation.

71. Nor was using the combination of both short-term and long-term shared knowledge well-understood, routine or conventional as recited in, for example, claim 1 of the '681 patent and claim 4 of the '049 patent. In other words, even if persons of ordinary skill in the art had appreciated the individual benefits of short-term and, in addition, long-term shared knowledge, a person of ordinary skill in the art would recognize the substantial benefit of improving a computer system to rely on and integrate these two distinct forms of information.

72. Additionally, "generating a response to the utterance" where the "speech engine grammatically or syntactically adapts the response based on the intended meaning established within the identified context" or, alternatively, "generating… based on the interpretation of the natural language utterance" was not well-understood, routine or conventional. Rather, the conventional approach was to use a fixed set of possible commands to provide the user with a menu of options. As explained above, the Command and Control approach suffered from numerous deficiencies.

73. The claims of the '049 patent further recite the concept of a "model" which depending on the particular claim may pertain to "short-term knowledge," "long-term knowledge," or both. Though a specific creature of computer science, creating a "model" for some or all of a conversation would not have been well-established, routine or conventional. This concept was not the typical way a voice-based system would keep track of voice-based inputs. Rather, the conventional approach would have been to create a text string and attempt to match the text with a list of items. Generating a "model" for the conversation would have been contrary to conventional wisdom. Persons of ordinary skill in the art would not have appreciated

that the increased computational complexities would have garnered benefits in terms of overall accuracy.

74. A person of ordinary skill in the art would recognize that the claim limitations of the ’681 and ’049 patents are directed to the inventive concepts described in the specification and prosecution history.

The ’703 Patent

75. United States Patent Number 9,626,703 (“the ’703 patent”), entitled “Voice Commerce,” was duly and legally issued on April 18, 2017, and names Michael R. Kennewick, Sr. as the inventor. Attached as Exhibit G is a true and correct copy of the ’703 patent.

76. The ’703 patent claims, among other things, a system for providing voice commerce, the system comprising: one or more physical processors programmed with computer program instructions which, when executed, cause the one or more physical processors to: receive a user input comprising a natural language utterance; provide, without further user input after the receipt of the user input, the natural language utterance as an input to a speech recognition engine; obtain, without further user input after the receipt of the user input, one or more words or phrases recognized from the natural language utterance as an output of the speech recognition engine; identify, without further user input after the receipt of the user input, a context based at least on the one or more words or phrases; determine, without further user input identifying a product or service after the receipt of the user input, a first product or service to be purchased on behalf of a user based at least on the determined context; obtain, without further user input identifying payment information after the receipt of the user input, first payment information with which to pay for the product or service; obtain, without further user input identifying shipping information after the receipt of the user input, first shipping information with which to deliver the product or service, wherein the first shipping information specifies a

name or address of a recipient to which the product or service is to be delivered after the product or service is purchased; and complete, without further user input identifying a product or service, payment information, or shipping information after the receipt of the user input, a purchase transaction for the first product or service based on the first payment information and the first shipping information.

77. VoiceBox is the assignee of the entire right, title, and interest in the ’703 patent.

78. Online shopping systems in existence before the inventions of the ’703 patent typically required a user to browse a website to locate a product, make payment, and have the product delivered.

79. The inventor recognized a significant problem with such systems in that a user must search a website in order to locate a product or service to be purchased and fill-out numerous payment and shipping forms to complete checkout. This problem was exacerbated on a mobile electronic device because such devices typically have small screens and keyboards making it hard for the user to search for the product or service to purchase and input payment and shipping information.

80. In certain embodiments, the ’703 patent advantageously provides a voice commerce system with a voice user interface for online shopping. For example, Figure 1 reproduced below shows an architecture for the voice commerce system.

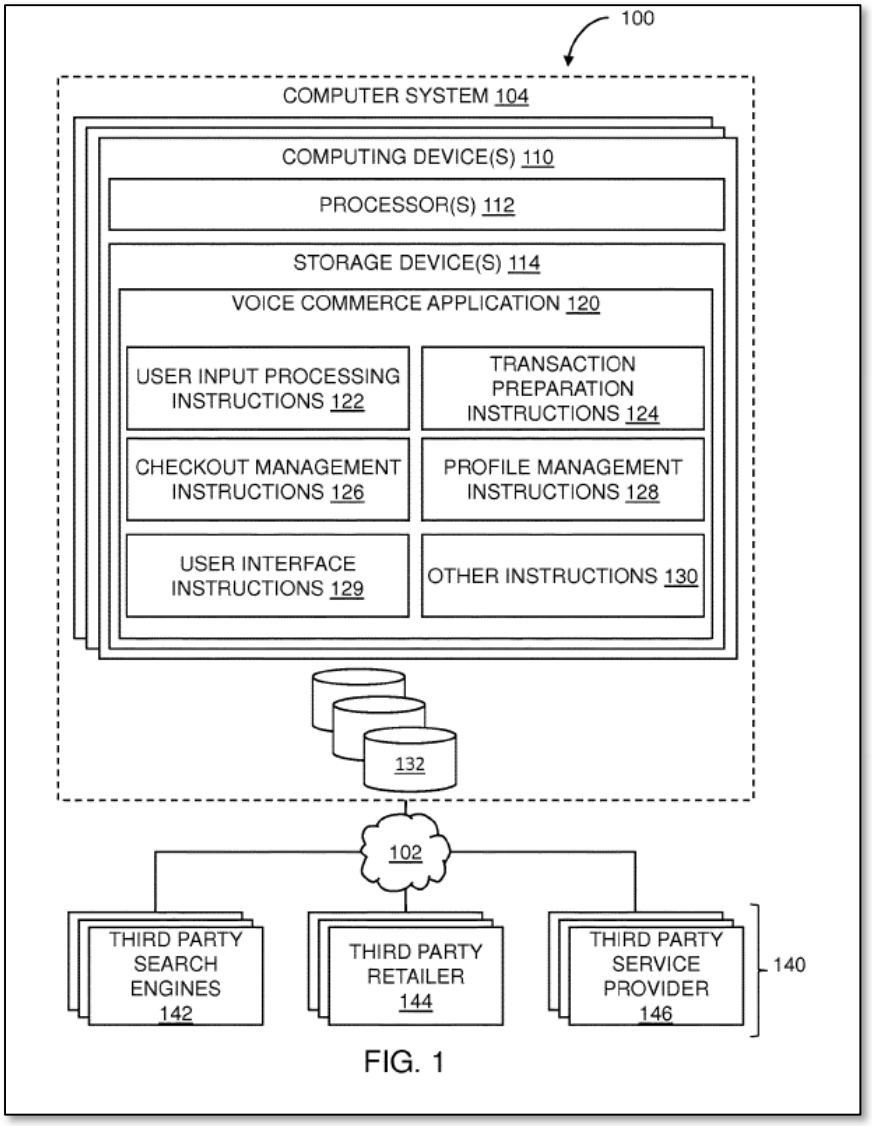

FIG. 1

The voice commerce system includes user input processing instructions 122, which may comprise a speech recognition engine and a natural language processing engine.

81. Figure 2, reproduced below, shows a system for facilitating natural language processing for the voice commerce system including a speech recognition engine and a natural language processing engine.

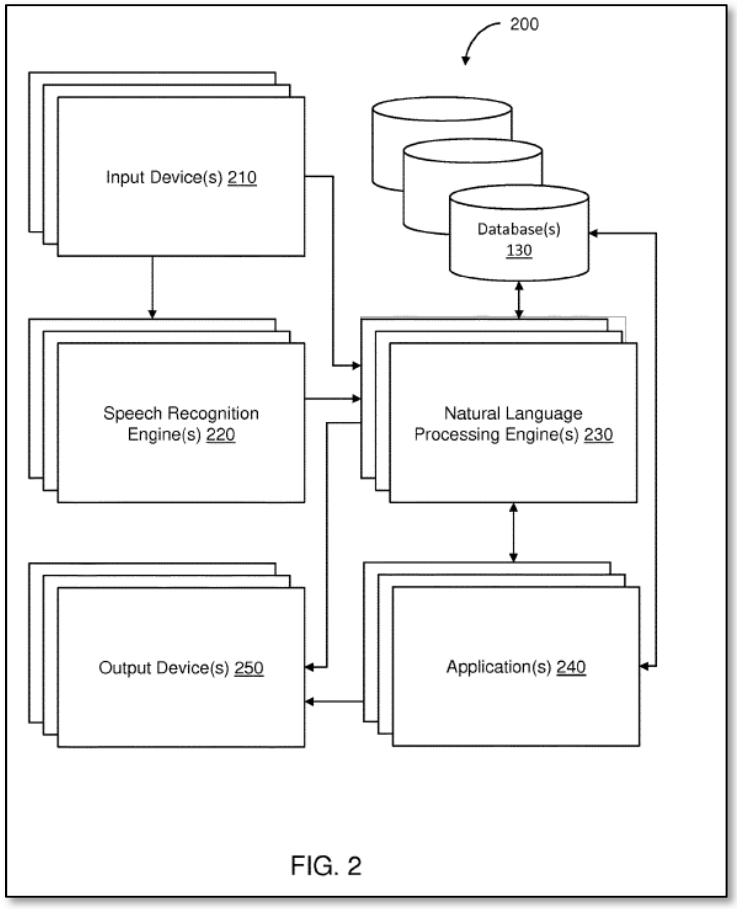

FIG. 2

82. The ’703 patent claims and describes a system that advantageously determines a product or service to be purchased on behalf of the user based on a natural language utterance. To do so, the system receives a natural language utterance and uses a speech recognition engine to recognize words and phrases from the natural language utterance. An example of this speech recognition engine is shown in Figure 2 as the Speech Recognition Engine 220. From the words and phrases the system identifies a context and determines a product or service to be purchased without further user input identifying a product or service. Exemplary components for performing this natural language processing are the Natural Language Processing Engine 230 shown in Figure 2 and the Transaction Preparation Instructions 124 shown in Figure 1.

83. By providing this innovation, the inventor was able to improve the functioning of voice user interfaces for online shopping systems thereby improving the operation of those systems in an unconventional manner. For example, the innovations in the ’703 patent determine a product or service to be purchased based on a natural language utterance. This distinguishes the ’703 patent from existing online shopping systems that required a user to search a website to locate a product or service to be purchased. In this regard, one of the problems faced by the inventors was necessarily rooted in online shopping technology specifically arising in the realm of online shopping.

84. The system has a further advantage in that it prepares and completes a transaction without further user input identifying a product or service, payment information, and/or shipping information. The system may obtain payment information with which to pay for the product or service without further user input identifying payment information. The system obtains shipping information with which to deliver the product or service without further user input identifying shipping information. Then the system completes a purchase transaction for the product or service without further user input identifying a product or service, payment information, and/or shipping information. An exemplary component for performing the above is the checkout management instructions 126 shown in Figure 1 of the ’703 patent.

85. In doing so, the inventor was able to improve the functioning of online shopping and voice user interface systems thereby improving the operation of those systems in an unconventional manner. For example, the innovations in the ’703 patent prepare and complete a transaction without further user input identifying a product or service, payment information, or shipping information. This distinguishes the ’703 patent from existing online shopping systems that required a user to search for a product or service and fill-out numerous payment and

shipping forms to complete checkout. In this regard, one of the problems faced by the inventors was necessarily rooted in online shopping technology specifically arising in the realm of online shopping.

86. During prosecution of the '703 patent, the examiner rejected numerous application claims as being unpatentable over prior art including Li (2009/0265163) and Gailey (2002/0161647). As argued by VoiceBox Technologies' prosecution counsel:

> Applicant respectfully disagrees with the rejections for at least the reason that the references relied upon by the Examiner do not disclose, teach or suggest each and every feature of the claims prior to the foregoing amendment to the claims. Nonetheless, solely to expedite prosecution, and expressly not acquiescing to the propriety of the alleged rejection, the claims have been amended to clarify aspects of the claimed invention.
>
> Independent claim 1 recites, *inter alia*, the features of:
>
> > obtaining, by the computer system, without further user input after the receipt of the user input, shipping information with which to deliver the product or service, wherein the shipping information specifies a name or address of a recipient to which the product or service is to be delivered after the product or service is purchased
>
> Claims 15, 25, and 30 recite similar features.
>
> In the Final Action, the Examiner acknowledges that Li does not teach "obtaining shipping information with which to deliver the product or service." In an attempt to cure the acknowledged deficiency of Li, the Examiner alleges that Gailey at paragraph [0105] teaches the

> foregoing. However, Gailey at paragraph [0105] at best relates to allowing a user to select a predefined address for delivery, not "obtaining, by the computer system, without further user input after the receipt of the user input, shipping information with which to deliver the product or service, wherein the shipping information specifies a name or address of a recipient to which the product or service is to be delivered after the product or service is purchased" as claimed.

87. A skilled artisan would not consider the claim limitations of the '703 patent – either alone or in combination – to recite well-understood, routine, or conventional concepts. For example, the '703 patent performed the step of "determining, by the computer system, a context based at least on the one or more words or phrases." As explained above with respect to

the ’681 and ’049 patents, the conventional approach was a Command and Control system which did not rely on context, such as short-term and long-term knowledge about the user. The use of “context” advantageously enabled the ability for “a product or service to be purchased” “without further user input.” Conventional wisdom dictated that additional information was needed from the user since the context for the utterances was unavailable.

88. Conventional wisdom in the context of shopping was keenly focused on menu-based systems. Indeed, web-stores were (and still are) based on product categorizations. The typical user experience involves going through a services of menus to narrow down the particular product. As such, there was particular focus and motivation to emulate the menus in a speech-based system. That is, for the computer to read options which the end-user selects before moving to the next menu. The ’703 patent represents a dramatic departure by “identifying … without further user input after receipt of the user input, a product or service to be purchased …based at least on the determined context…”

89. Additionally, conventional wisdom was that to complete an online purchase the user would either have to provide a shipping address or, at minimum, affirmatively select a predefined address. While this approach was perhaps feasible in the context of a visual user interface, the inventor recognized that it was an unnecessary and distracting step in the context of voice-controlled purchase transactions. Therefore, the ’703 patent requires “obtaining, by the computer system, without further user input after the receipt of the user input, shipping information with which to deliver the product or service.”

90. Additionally, “obtaining … a predetermined set of sellers specified by an administrator of the system that is different than the user” was not well-understood, routine, or conventional. Indeed, such information could be used to reduce the amount of information

manually entered (or selected) by the user which reduces the complexity associated with using voice for commerce. This was an unconventional approach to solving the problems associated with transactions via voice.

91. Thus, a person of ordinary skill in the art would recognize that the claim limitations of the ’703 patent are directed to the inventive concepts described in the specification and prosecution history.

The ’176 , ’536, and ’097 Patents

92. United States Patent Number 7,818,176 (“the ’176 patent”), entitled “System and Method for Selecting and Presenting Advertisements Based on Natural Language Processing of Voice-based Input,” was duly and legally issued on October 19, 2010, and names Tom Freeman and Mike Kennewick as the inventors. Attached as Exhibit I is a true and correct copy of the ’176 patent.

93. The ’176 patent claims, among other things, a system for selecting and presenting advertisements in response to processing natural language utterances, comprising: an input device that receives a natural language utterance containing at least one request at an input device; a speech recognition engine coupled to the input device, wherein the speech recognition engine recognizes one or more words or phrases in the natural language utterance, wherein to recognize the words or phrases in the natural language utterance, the speech recognition engine is configured to: map a stream of phonemes contained in the natural language utterance to one or more syllables that are phonemically represented in an acoustic grammar; and generate a preliminary interpretation for the natural language utterance from the one or more syllables, wherein the preliminary interpretation generated from the one or more syllables includes the recognized words or phrases; a conversational language processor coupled to the speech recognition engine, wherein the conversational language processor is configured to: interpret the

recognized words or phrases, wherein interpreting the recognized words or phrases includes establishing a context for the natural language utterance; select an advertisement in the context established for the natural language utterance; and present the selected advertisement via an output device.

94. VoiceBox is the assignee of the entire right, title, and interest in the ’176 patent.

95. United States Patent Number 8,886,536 (“the ’536 patent”), entitled “System and Method for Delivering Targeted Advertisements and Tracking Advertisement Interactions in Voice Recognition Contexts,” was duly and legally issued on November 11, 2014, and names Tom Freeman and Mike Kenn[e]wick as the inventors. Attached as Exhibit K is a true and correct copy of the ’536 patent.

96. The ’536 patent claims, among other things, a computer-implemented method of providing promotional content related to one or more natural language utterances and/or responses, the method being implemented by a computer system that includes one or more physical processors executing one or more computer program instructions which, when executed, perform the method, the method comprising: receiving, at the one or more physical processors, a first natural language utterance; providing, by the one or more physical processors, a response to the first natural language utterance; receiving, at the one or more physical processors, a second natural language utterance relating to the first natural language utterance; identifying, by the one or more physical processors, requests associated with the second natural language utterance, wherein the requests include a first request to be processed by a first device associated with a user and a second request to be processed by a second device associated with the user; determining, by the one or more physical processors, promotional content that relates to

one or more of the first request or the second request; and presenting, by the one or more physical processors, the promotional content to the user.

97. VoiceBox is the assignee of the entire right, title, and interest in the ’536 patent.

98. United States Patent Number 9,269,097 (“the ’097 patent”), entitled “System and Method for Delivering Targeted Advertisements and/or Providing Natural Language Processing Based on Advertisements,” was duly and legally issued on February 23, 2016, and names Tom Freeman and Mike Kennewick as the inventors. Attached as Exhibit M is a true and correct copy of the ’097 patent.

99. The ’097 patent claims, among other things, a method for providing natural language processing based on advertisements, the method being implemented on a computer system having one or more physical processors executing computer program instructions which, when executed, perform the method, the method comprising: providing, by the computer system, an advertisement associated with a product or service for presentation to a user; receiving, at the computer system, a natural language utterance of the user; and interpreting, by the computer system, the natural language utterance based on the advertisement and, responsive to the existence of a pronoun in the natural language utterance, determining whether the pronoun refers to one or more of the product or service or a provider of the product or service.

100. VoiceBox is the assignee of the entire right, title, and interest in the ’097 patent.

101. The ’176, ’536, and ’097 patents stem from a common original patent application and thus share a common specification and patent figures. Before the inventions of these related patents, voice user interface systems were typically difficult to use, in part, because they had complex human to machine interfaces. Such systems forced a user to navigate through a series of menus and provide a series of user inputs to perform a relatively simple task.

102. The inventors recognized significant problems with existing systems. The systems did not allow a user to directly issue a request without having to memorize specific syntaxes, words, phrases, concepts, semantic indicators, or other keywords/qualifiers. Similarly, when users were uncertain of particular needs, many existing systems did not engage the user in a productive, cooperative dialogue to resolve requests and advance a conversation. Instead, many existing speech interfaces forced users to use a fixed set commands or keywords to communicate requests in ways that systems could understand. Using existing voice user interfaces, there was virtually no option for dialogue between the user and the system to satisfy mutual goals.

103. The inventors recognized other problems with existing systems. The lack of adequate voice user interfaces resulted in missed opportunities for providing valuable and relevant information to users. Not only did this potentially leave user requests unresolved, in certain instances, providers of goods and services may have lost out on potential business. In an increasingly global marketplace, where marketers are continually looking for new and effective ways to reach consumers, the problems with existing voice user interfaces left a large segment of consumer demand unfulfilled. Furthermore, existing techniques for marketing, advertising, or otherwise calling consumers to action failed to effectively utilize voice-based information, which is one of the most natural, intuitive methods of human interaction.

104. In certain embodiments, the ’176, ’536, and ’097 patents advantageously use a speech recognition engine and natural language processing to interpret natural language utterances, establish context for the natural language utterance, identify requests associated with natural language utterances, and provide an advertisement or promotional content to the user. In doing so, the inventors were able to improve the functioning of voice user interface systems thereby improving the operation of those systems in an unconventional manner. For example, the

innovations in the ’176, ’536, and ’097 patents allowed a user to directly issue natural language requests and engage in a productive, cooperative dialogue to resolve requests and advance a conversation. In this regard, one of the problems faced by the inventors was necessarily rooted in voice user interface technology specifically arising in the realm of voice user interface systems.

105. With respect to the ’176 patent, the patent describes and claims a system for selecting and presenting advertisements in response to processing natural language utterances that use a speech recognition engine and a conversational language processor to interpret a natural language utterance, establish context, select an advertisement, and present it to the user. The patent further describes and claims using a speech recognition engine configured to map a stream of phonemes contained in the natural language utterance to one or more syllables that are phonemically represented in an acoustic grammar and generate a preliminary interpretation for the natural language utterance from the one or more syllables, wherein the preliminary interpretation generated from the one or more syllables includes the recognized words or phrases. Conventional knowledge among those of ordinary skill in the art neither taught a speech recognition engine configured in this way nor expressed any appreciation for the substantial advantages associated with using this speech recognition engine in a system that utilizes a speech recognition engine configured in this way with a conversational language processor to interpret a natural language utterance, establish context, select an advertisement, and present it to the user. In this regard, using this speech recognition engine in a system that utilizes a conversational language processor to interpret a natural language utterance, establish context, select an advertisement, and present it to the user was not well-understood, routine, or conventional and stands in sharp contrast to the conventional and routine approach of existing systems that

required a user to memorize specific syntaxes, words, phrases, concepts, semantic indicators, or other keywords/qualifiers.

106. During prosecution of the '176 patent, the examiner determined that numerous application claims were directed to allowable subject matter. According to the examiner:

> With respect to claim 22, the prior art of record does not disclose mapping a stream of phonemes to one or more syllables that are phonemically represented in an acoustic grammar and generating a preliminary interpretation from the one or more syllables (see related U.S. Patent 7,634,409 assigned to the instant application's assignee).

107. In other words, the patent examiner agreed that the extensive list of cited references lacked the key technique for accomplishing the step of "recognizing one or more words or phrases in the natural language utterance at a speech recognition engine" as recited in, for example, claim 1 of the '176 patent. Indeed, the '176 patent claims the step of "mapping a stream of phonemes contained in the natural language utterance to one or more syllables that are phonemically represented in an acoustic grammar." The concept of mapping "phonemes" to "syllables" was unconventional. Instead, the common approach would have been to match entire words. In this regard, the focus in conventional systems was to increase the speed and accuracy of matching words by, among other things, creating menus that accurately guided users to saying one of a small set of words that the system expected based on the menu prompts.

108. The invention goes on to claim the step of "generating a preliminary interpretation for the natural language utterance from the one or more syllables." This too was unconventional and not routine to a person of ordinary skill in the art, as it focused on a multi-step approach to

interpreting speech, rather than the prior art one-step approach to matching utterances to a small number of words. Thereafter, according to the invention, recognized words or phrases are interpreted in a "conversational language processor" which interprets the words or phrases based on "context for the natural language utterance." As explained above, VoiceBox pioneered the "conversational language processor." It was not well-understood, routine or conventional prior to the widespread adoption of the innovations in the VoiceBox Patents.

109. The '176 patent also advantageously provided in certain claims a "personalized cognitive model derived from an interaction pattern for a specific user." In other words, a specific data structure is generated on a per-user basis. This is at odds with conventional wisdom which focused on limiting users with potentially many different accents, word choices, or speaking patterns to use only a discrete and generic set of utterances. No attempt had been made in prior art systems to distinguish among users based on speech characteristics and/or other known information about users.

110. The '536 patent describes and claims a computer-implemented method of providing promotional content related to one or more natural language utterances and/or responses that includes receiving more than one natural language utterance and identifying, by a physical processor, requests associated with the second natural language utterance wherein the requests include a first request to be processed by a first device associated with a user and a second request to be processed by a second device associated with the user.

111. The known prior art in the field of voice user interfaces neither taught this computer implemented method that identifies, by a physical processor, requests including a first request to be processed by a first device associated with a user and a second request to be processed by a second device associated with the user nor expressed any appreciation for the

substantial advantages associated with this computer implemented method that identifies, by a physical processor, requests including a first request to be processed by a first device associated with a user and a second request to be processed by a second device associated with the user. In this regard, using this computer implemented method that identifies, by a physical processor, requests including a first request to be processed by a first device associated with a user and a second request to be processed by a second device associated with the user was not well-understood, routine, or conventional and stands in sharp contrast to the conventional and routine approach of existing systems that did not allow a user to directly issue requests.

112. During prosecution of the ’536 patent, the examiner rejected certain pending applications claims as anticipated by Ashton (U.S. Patent Application Publication 2007/0203736). The examiner asserted that “Ashton discloses a computer-implemented method (Fig. 12) of obtaining conversationally-related promotional content.” The examiner went on to provide additional details regarding Aston’s alleged disclosures.

113. In response, the applicants amended certain claims to require, *inter alia*, “providing the one or more recognized words to the first domain agent associated with a first domain and a second domain agent associated with a second domain”; “obtaining a first interpretation of the second natural language utterance from the first domain agent”; “obtaining a second interpretation of the second natural language utterance from the second domain agent”; and “determining the interpretation based on one or more of the first interpretation or the second interpretation.”

114. The examiner eventually allowed claims of the ’536 patent over the identified references, including Ashton. As such, the concept of “domain agents” which interpret voice for domains, such as navigation, music, a specific user, global users, advertising, e-commerce etc.

This was advantageous because speech could be analyzed in each domain and the interpretation could be determined by examining the result across the various domains. The concept of using multiple domain agents for the same speech was not routine, conventional, or well-understood. Rather, the approach had been to direct users to utter from a narrow pre-defined dictionary of terms. Further, the concept of using results from different domain agents to assess which meaning best fit the context was not routine, conventional, or well-understood.

115. Additionally, the ’536 patent’s concept of “determining … promotional content based on the interpretation” and “presenting … the promotional content to the user” was not conventional. Rather, the conventional approach would have been to provide generic promotional content to all users. The ’536 patent, however, provided an important advance towards providing promotional content based on an understanding of the user’s speech including the specific context for that speech as determined by at least two domain agents. The notion of multiple domain agents was unheard of and, to a person of ordinary skill in the art, represented a substantial enhancement to the voice processing computer system itself.

116. Turning to the ’097 patent, the patent describes and claims a method for providing natural language processing based on advertisements which includes interpreting, by a computer system, a natural language utterance based on an advertisement and, responsive to the existence of a pronoun in the natural language utterance, determining whether the pronoun refers to one or more of a product or service or a provider of the product or service from an advertisement.

117. During prosecution of the ’097 patent, the examiner determined that numerous application claims were patentable over the prior art. According to the examiner:

> The closest prior art of record is Lee et al. (U.S. Patent 8,719,005, hereinafter "Lee"). Lee discloses a method and system for responding to natural language queries, comprising identifying a pronoun in a natural language input, determining the subject referred to by the pronoun, and providing advertisements based on the natural language interpretation of the natural language input (column 8, lines 11-19 and column 10, line 66 to column 11, line 19). However, Lee and the additional prior art of record does not disclose or suggest interpreting a natural language utterance based on a provided advertisement, and, responsive to the existence of a pronoun in the natural language utterance, determining whether the pronoun refers to one or more of the product or service or a provider of the product or service associated with the advertisement, as required by independent claims 1 and 23.

118. As discussed above, the examiner concluded that the invention of the '097 patent to be distinct from Lee. As discussed above, VoiceBox had realized that the context for the utterance was important for ascertaining the meaning of the user's utterance. Here, the '097 patent focuses on a specific type of context; namely context related to a "pronoun" in the natural language utterance. Further, the "pronoun refers to one or more of the product or service or a provider of the product or service." The conventional approach would have been to direct the user to utter from a discrete dictionary of words. A person of ordinary skill in the art would have designed a system to reject or otherwise disregard the user's attempted use of a pronoun due to the inherent ambiguity of the word. However, VoiceBox recognized that the use of a pronoun is not necessarily ambiguous when viewed in the context of the preceding advertisement. This, however, required that the computer system understand that it was providing an advertisement and, further, understand the products and/or services to which the advertisement relates. The

’097 patent therefore provided a specific enhancement to prior art voice systems which could only understand a discreet list of words from a menu.

119. The known prior art in the field of voice user interfaces neither taught this method for providing natural language processing based on advertisements which includes interpreting, by a computer system, a natural language utterance based on an advertisement and, responsive to the existence of a pronoun in the natural language utterance, determining whether the pronoun refers to one or more of a product or service or a provider of the product or service from an advertisement nor expressed any appreciation for the substantial advantages associated with this method for providing natural language processing based on advertisements which includes interpreting, by a computer system, a natural language utterance based on an advertisement and, responsive to the existence of a pronoun in the natural language utterance, determining whether the pronoun refers to one or more of a product or service or a provider of the product or service from an advertisement. In this regard, this method for providing natural language processing based on advertisements which includes interpreting, by a computer system, a natural language utterance based on an advertisement and, responsive to the existence of a pronoun in the natural language utterance, determining whether the pronoun refers to one or more of a product or service or a provider of the product or service from an advertisement was not well-understood, routine, or conventional and stands in sharp contrast to the conventional and routine approach of existing systems that failed to effectively utilize voice-based information, which is one of the most natural, intuitive methods of human interaction.

120. A skilled artisan would not consider the claim limitations of the ’176, ’536, and ’097 patents – either alone or in combination – to recite well-understood, routine, or conventional concepts. Instead, a person of ordinary skill in the art would recognize that the

claim limitations of the ’176, ’536, and ’097 patents are directed to the inventive concepts described in the specification and prosecution history.

121. The VoiceBox Patents were duly issued by the USPTO and are valid under 35 U.S.C. §§ 101, 102, 103, and 112.

COUNT ONE (INFRINGEMENT OF ’681 PATENT)

122. VoiceBox incorporates and realleges each and every allegation contained in the foregoing paragraphs of this complaint, as though fully set forth herein.

123. Amazon has and continues to infringe the ’681 patent by making, using, selling, offering for sale, and/or importing into the United States, Alexa Products, which embody or use the inventions of the ’681 patent in violation of 35 U.S.C. § 271(a). Exemplary evidence and an exemplary chart mapping a claim to Alexa Products can be found in Exhibit D. VoiceBox anticipates identifying additional asserted claims in accordance with the case schedule and its discovery obligations.

124. Amazon has been and is inducing infringement of the ’681 patent by actively and knowingly inducing others to make, use, sell, offer for sale, or import Alexa Products that include Alexa and embody or use the inventions claimed in the ’681 patent in violation of 35 U.S.C. § 271(b). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products to operate in an infringing manner. Amazon causes Alexa Products to be made available through its own website. Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the ’681 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has

known its actions would induce infringement by users of Alexa Products. Additionally, VoiceBox Technologies informed the Amazon employees who attended the February 2, 2017 meeting at VoiceBox Technologies' office of the '681 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the '681 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, the '681 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent Nos. 9,424,840; 9,852,729; 9,922,639; 10,026,394; and 10,102,845. On information and belief, Amazon has known of, or been willfully blind to, the existence of the '681 patent since no later than March 4, 2015, the date on which the '681 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products.

125. Amazon has been and is continuing to contributorily infringe the '681 patent by selling or offering to sell Alexa Products, knowing them to be especially made or especially adapted for practicing the invention of the '681 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use in violation of 35 U.S.C. § 271(c). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products to operate in an infringing manner. Amazon causes Alexa Products to be made available through its own website. On information and belief, Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the '681

patent since no later than it received a copy of this complaint. No later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, VoiceBox Technologies informed the Amazon employees who attended the February 2, 2017 meeting at VoiceBox Technologies' office of the '681 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the '681 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, the '681 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent Nos. 9,424,840; 9,852,729; 9,922,639; 10,026,394; and 10,102,845. On information and belief, Amazon has known of, or been willfully blind to, the existence of the '681 patent since no later than March 4, 2015, the date on which the '681 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use.

126. On information and belief, Amazon has known of the existence of the '681 patent, and its acts of infringement have been willful and in disregard for the '681 patent, without any reasonable basis for believing that it had a right to engage in the infringing conduct. Amazon has known of, or been willfully blind to, the existence of the '681 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has known its Alexa Products infringe the '681 patent. Additionally, VoiceBox Technologies informed the Amazon

employees who attended the February 2, 2017 meeting at VoiceBox Technologies' office of the '681 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the '681 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the '681 patent. Additionally, the '681 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent Nos. 9,424,840; 9,852,729; 9,922,639; 10,026,394; and 10,102,845. On information and belief, Amazon has known of, or been willfully blind to, the existence of the '681 patent since no later than March 4, 2015, the date on which the '681 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the '681 patent.

127. Amazon's infringement has been, and continues to be knowing, intentional, and willful.

128. Amazon's acts of infringement of the '681 patent have caused and will continue to cause VoiceBox damages for which VoiceBox is entitled to compensation pursuant to 35 U.S.C. § 284.

129. This case is exceptional and, therefore, VoiceBox is entitled to an award of attorney's fees pursuant to 35 U.S.C. § 285.

COUNT TWO (INFRINGEMENT OF THE '049 PATENT)

130. VoiceBox incorporates and realleges each and every allegation contained in the foregoing paragraphs of this complaint, as though fully set forth herein.

131. Amazon has and continues to infringe the '049 patent by making, using, selling, offering for sale, and/or importing into the United States, Alexa Products, which embody or use

the inventions of the ’049 patent in violation of 35 U.S.C. § 271(a). Exemplary evidence and an exemplary chart mapping a claim to Alexa Products can be found in Exhibit F. VoiceBox anticipates identifying additional asserted claims in accordance with the case schedule and its discovery obligations.

132. Amazon has been and is inducing infringement of the ’049 patent by actively and knowingly inducing others to make, use, sell, offer for sale, or import Alexa Products that include Alexa and embody or use the inventions claimed in the ’049 patent in violation of 35 U.S.C. § 271(b). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products to operate in an infringing manner. Amazon causes Alexa Products to be made available through its own website. On information and belief, Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the ’049 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, VoiceBox Technologies informed the Amazon employees who attended the February 2, 2017 meeting at VoiceBox Technologies’ office of the ’049 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’049 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, the ’681 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent Nos. 9,424,840; 9,852,729; 9,922,639; 10,026,394; and 10,102,845. The ’681 patent or its published application

was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on March 4, 2015. By March 4, 2015, the ’049 patent’s application had published claiming priority to the ’681 patent. On April 21, 2015, the ’049 patent issued claiming priority to the ’681 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’049 patent since no later than April 21, 2015. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products.

133. Amazon has been and is continuing to contributorily infringe the ’049 patent by selling or offering to sell Alexa Products, knowing them to be especially made or especially adapted for practicing the invention of the ’049 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use, in violation of 35 U.S.C. § 271(c). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products to operate in an infringing manner. Amazon causes Alexa Products to be made available through its own website. On information and belief, Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the ’049 patent since no later than it received a copy of this complaint. No later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, VoiceBox Technologies informed the Amazon employees who attended the February 2, 2017 meeting at VoiceBox Technologies’ office of the ’049 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’049 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its

Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, the ’681 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent Nos. 9,424,840; 9,852,729; 9,922,639; 10,026,394; and 10,102,845. The ’681 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on March 4, 2015. By March 4, 2015, the ’049 patent’s application had published claiming priority to the ’681 patent. On April 21, 2015, the ’049 patent issued claiming priority to the ’681 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’049 patent since no later than April 21, 2015. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use.

134. On information and belief, Amazon has known of the existence of the ’049 patent, and its acts of infringement have been willful and in disregard for the ’049 patent, without any reasonable basis for believing that it had a right to engage in the infringing conduct. Amazon has known of, or been willfully blind to, the existence of the ’049 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has known its Alexa Products infringe the ’049 patent. Additionally, VoiceBox Technologies informed the Amazon employees who attended the February 2, 2017 meeting at VoiceBox Technologies’ office of the ’049 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’049 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the ’049 patent. Additionally, the ’681 patent or its published application was cited during prosecution of one or more patents

assigned to a subsidiary of Amazon, including U.S. Patent Nos. 9,424,840; 9,852,729; 9,922,639; 10,026,394; and 10,102,845. The ’681 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on March 4, 2015. By March 4, 2015, the ’049 patent’s application had published claiming priority to the ’681 patent. On April 21, 2015, the ’049 patent issued claiming priority to the ’681 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’049 patent since no later than April 21, 2015. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the ’049 patent.

135. Amazon’s infringement has been, and continues to be knowing, intentional, and willful.

136. Amazon’s acts of infringement of the ’049 patent have caused and will continue to cause VoiceBox damages for which VoiceBox is entitled to compensation pursuant to 35 U.S.C. § 284.

137. This case is exceptional and, therefore, VoiceBox is entitled to an award of attorney’s fees pursuant to 35 U.S.C. § 285.

COUNT THREE (INFRINGEMENT OF THE ’703 PATENT)

138. VoiceBox incorporates and realleges each and every allegation contained in the foregoing paragraphs of this complaint, as though fully set forth herein.

139. Amazon has and continues to infringe the ’703 patent by making, using, selling, offering for sale, and/or importing into the United States, Alexa Products, which embody or use the inventions of the ‘703 patent in violation of 35 U.S.C. § 271(a). Exemplary evidence and an exemplary chart mapping a claim to Alexa Products can be found in Exhibit H. VoiceBox

anticipates identifying additional asserted claims in accordance with the case schedule and its discovery obligations.

140. Amazon has been and is inducing infringement of the ’703 patent by actively and knowingly inducing others to make, use, sell, offer for sale, or import Alexa Products that include Alexa and embody or use the inventions claimed in the ’703 patent, in violation of 35 U.S.C. § 271(b). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products to operate in an infringing manner. Amazon causes Alexa Products to be made available through its own website. On information and belief, Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the ’703 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, in April of 2017, VoiceBox Technologies sent a written summary of VoiceBox Technologies’ patent portfolio to Amazon that informed Amazon of the ’703 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’703 patent since no later than April of 2017. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products.

141. Amazon has been and is continuing to contributorily infringe the ’703 patent by selling or offering to sell Alexa Products, knowing them to be especially made or especially adapted for practicing the invention of the ’703 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use in violation of 35 U.S.C. § 271(c). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products

to operate in an infringing manner. Amazon causes Alexa Products to be made available through its own website. On information and belief, Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the '703 patent since no later than it received a copy of this complaint. No later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, in April of 2017, VoiceBox Technologies sent a written summary of VoiceBox Technologies' patent portfolio to Amazon that informed Amazon of the '703 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the '703 patent since no later than April of 2017. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use.

142. On information and belief, Amazon has known of the existence of the '703 patent, and its acts of infringement have been willful and in disregard for the '703 patent, without any reasonable basis for believing that it had a right to engage in the infringing conduct. Amazon has known of, or been willfully blind to, the existence of the '703 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has known its Alexa Products infringe the '703 patent. Additionally, in April of 2017, VoiceBox Technologies sent a written summary of VoiceBox Technologies' patent portfolio to Amazon that informed Amazon of the '703 patent. On information and belief, Amazon has known of, or been willfully blind to,

the existence of the ’703 patent since no later than April of 2017. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the ’703 patent.

143. Amazon’s infringement has been, and continues to be knowing, intentional, and willful.

144. Amazon’s acts of infringement of the ’703 patent have caused and will continue to cause VoiceBox damages for which VoiceBox is entitled to compensation pursuant to 35 U.S.C. § 284.

145. This case is exceptional and, therefore, VoiceBox is entitled to an award of attorney’s fees pursuant to 35 U.S.C. § 285.

COUNT FOUR (INFRINGEMENT OF THE ’176 PATENT)

146. VoiceBox incorporates and realleges each and every allegation contained in the foregoing paragraphs of this complaint, as though fully set forth herein.

147. Amazon has and continues to infringe the ’176 patent by making, using, selling, offering for sale, and/or importing into the United States, Alexa Products, which embody or use the inventions of the ’176 patent in violation of 35 U.S.C. § 271(a). Exemplary evidence and an exemplary chart mapping a claim to Alexa Products can be found in Exhibit J. VoiceBox anticipates identifying additional asserted claims in accordance with the case schedule and its discovery obligations.

148. Amazon has been and is inducing infringement of the ’176 patent by actively and knowingly inducing others to make, use, sell, offer for sale, or import Alexa Products that include Alexa and embody or use the inventions claimed in the ’176 patent, in violation of 35 U.S.C. § 271(b). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products to operate in an infringing manner. Amazon causes Alexa Products to be

made available through its own website. On information and belief, Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the ’176 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, VoiceBox notified the Amazon employees that attended the October 26, 2011 meeting at VoiceBox Technologies’ office of the ’176 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’176 patent since October 26, 2011. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, the ’176 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,152,973. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’176 patent since no later than August 10, 2018, the date on which the ’176 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, U.S. Pat. No. 8,145,489 or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,049,656. U.S. Pat. No. 8,145,489 or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on January 12, 2015. By that date, U.S. Pat. No. 8,145,489 had issued claiming priority to the ’176 patent. On information and belief, Amazon has known of, or been willfully blind to,

the existence of the ’176 patent since no later than January 12, 2015. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products.

149. Amazon has been and is continuing to contributorily infringe the ’176 patent by selling or offering to sell Alexa Products, knowing them to be especially made or especially adapted for practicing the invention of the ’176 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use in violation of 35 U.S.C. § 271(c). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products to operate in an infringing manner. Amazon causes Alexa Products to be made available through its own website. On information and belief, Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the ’176 patent since no later than it received a copy of this complaint. No later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, VoiceBox notified the Amazon employees that attended the October 26, 2011 meeting at VoiceBox Technologies’ office of the ’176 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’176 patent since October 26, 2011. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, the ’176 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon,

including U.S. Patent No. 10,152,973. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’176 patent since no later than August 10, 2018, the date on which the ’176 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, U.S. Pat. No. 8,145,489 or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,049,656. U.S. Pat. No. 8,145,489 or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on January 12, 2015. By that date, U.S. Pat. No. 8,145,489 had issued claiming priority to the ’176 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’176 patent since no later than January 12, 2015. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use.

150. On information and belief, Amazon has known of the existence of the ’176 patent, and its acts of infringement have been willful and in disregard for the ’176 patent, without any reasonable basis for believing that it had a right to engage in the infringing conduct. Amazon has known of, or been willfully blind to, the existence of the ’176 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has known its Alexa Products infringe the ’176 patent. Additionally, VoiceBox notified the Amazon employees that attended the October 26, 2011 meeting at VoiceBox Technologies’ office of the ’176 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the

’176 patent since no later than October 26, 2011. No later than that date, Amazon has known its Alexa Products infringe the ’176 patent. Additionally, the ’176 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,152,973. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’176 patent since no later than August 10, 2018, the date on which the ’176 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the ’176 patent. Additionally, U.S. Pat. No. 8,145,489 or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,049,656. U.S. Pat. No. 8,145,489 or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on January 12, 2015. By that date, U.S. Pat. No. 8,145,489 had issued claiming priority to the ’176 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’176 patent since no later than January 12, 2015. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the ’176 patent.

151. Amazon’s infringement has been, and continues to be knowing, intentional, and willful.

152. Amazon’s acts of infringement of the ’176 patent have caused and will continue to cause VoiceBox damages for which VoiceBox is entitled to compensation pursuant to 35 U.S.C. § 284.

153. This case is exceptional and, therefore, VoiceBox is entitled to an award of attorney’s fees pursuant to 35 U.S.C. § 285.

COUNT FIVE (INFRINGEMENT OF THE ’536 PATENT)

154. VoiceBox incorporates and realleges each and every allegation contained in the foregoing paragraphs of this complaint, as though fully set forth herein.

155. Amazon has and continues to infringe the ’536 patent by making, using, selling, offering for sale, and/or importing into the United States, Alexa Products, which embody or use the inventions of the ’536 patent in violation of 35 U.S.C. § 271(a). Exemplary evidence and an exemplary chart mapping a claim to Alexa Products can be found in Exhibit L. VoiceBox anticipates identifying additional asserted claims in accordance with the case schedule and its discovery obligations.

156. Amazon has been and is inducing infringement of the ’536 patent by actively and knowingly inducing others to make, use, sell, offer for sale, or import Alexa Products that include Alexa and embody or use the inventions claimed in the ’536 patent, in violation of 35 U.S.C. § 271(b). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products to operate in an infringing manner. Amazon causes Alexa Products to be made available through its own website. On information and belief, Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the ’536 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, VoiceBox Technologies informed the Amazon employees who attended the February 2, 2017 meeting at VoiceBox Technologies’ office of the ’536 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the

’536 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, the ’176 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,152,973. The ’176 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on August 10, 2018. As of that date, the ’536 patent had issued claiming priority to the ’176 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’536 patent since no later than August 10, 2018. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, U.S. Pat. No. 8,145,489 or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,049,656. U.S. Pat. No. 8,145,489 or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on January 12, 2015. By that date, the ’536 patent had issued claiming priority to U.S. Pat. No. 8,145,489. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’536 patent since no later than January 12, 2015. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products.

157. Amazon has been and is continuing to contributorily infringe the ’536 patent by selling or offering to sell Alexa Products, knowing them to be especially made or especially adapted for practicing the invention of the ’536 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use, in violation of 35 U.S.C. § 271(c). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products

to operate in an infringing manner. Amazon causes Alexa Products to be made available through its own website. On information and belief, Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the ’536 patent since no later than it received a copy of this complaint. No later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, VoiceBox Technologies informed the Amazon employees who attended the February 2, 2017 meeting at VoiceBox Technologies’ office of the ’536 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’536 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, the ’176 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,152,973. The ’176 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on August 10, 2018. As of that date, the ’536 patent had issued claiming priority to the ’176 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’536 patent since no later than August 10, 2018. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, U.S. Pat. No. 8,145,489 or its published application was cited during

prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,049,656. U.S. Pat. No. 8,145,489 or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on January 12, 2015. By that date, the ’536 patent had issued claiming priority to U.S. Pat. No. 8,145,489. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’536 patent since no later than January 12, 2015. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use.

158. On information and belief, Amazon has known of the existence of the ’536 patent, and its acts of infringement have been willful and in disregard for the ’536 patent, without any reasonable basis for believing that it had a right to engage in the infringing conduct. Amazon has known of, or been willfully blind to, the existence of the ’536 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has known its Alexa Products infringe the ’536 patent. Additionally, VoiceBox Technologies informed the Amazon employees who attended the February 2, 2017 meeting at VoiceBox Technologies’ office of the ’536 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’536 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the ’536 patent. Additionally, the ’176 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,152,973. The ’176 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on August 10, 2018. As of that date, the ’536 patent had issued claiming priority to the ’176 patent. On information and belief, Amazon has known of, or been willfully

blind to, the existence of the ’536 patent since no later than August 10, 2018. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the ’536 patent. Additionally, U.S. Pat. No. 8,145,489 or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,049,656. U.S. Pat. No. 8,145,489 or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on January 12, 2015. By that date, the ’536 patent had issued claiming priority to U.S. Pat. No. 8,145,489. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’536 patent since no later than January 12, 2015. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the ’536 patent.

159. Amazon’s infringement has been, and continues to be knowing, intentional, and willful.

160. Amazon’s acts of infringement of the ’536 patent have caused and will continue to cause VoiceBox damages for which VoiceBox is entitled to compensation pursuant to 35 U.S.C. § 284.

161. This case is exceptional and, therefore, VoiceBox is entitled to an award of attorney’s fees pursuant to 35 U.S.C. § 285.

COUNT SIX (INFRINGEMENT OF THE ’097 PATENT)

162. VoiceBox incorporates and realleges each and every allegation contained in the foregoing paragraphs of this complaint, as though fully set forth herein.

163. Amazon has and continues to infringe the ’097 patent by making, using, selling, offering for sale, and/or importing into the United States, Alexa Products, which embody or use the inventions of the ’097 patent in violation of 35 U.S.C. § 271(a). Exemplary evidence and an

exemplary chart mapping a claim to Alexa Products can be found in Exhibit N. VoiceBox anticipates identifying additional asserted claims in accordance with the case schedule and its discovery obligations.

164. Amazon has been and is inducing infringement of the ’097 patent by actively and knowingly inducing others to make, use, sell, offer for sale, or import Alexa Products that include Alexa and embody or use the inventions claimed in the ’097 patent, in violation of 35 U.S.C. § 271(b). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products to operate in an infringing manner. Amazon causes Alexa Products to be made available through its own website. On information and belief, Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the ’097 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, VoiceBox Technologies informed the Amazon employees who attended the February 2, 2017 meeting at VoiceBox Technologies’ office of the ’097 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’097 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, the ’176 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,152,973. The ’176 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on August 10, 2018. As of that date, the ’097 patent had

issued claiming priority to the ’176 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’097 patent since no later than August 10, 2018. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products. Additionally, U.S. Pat. No. 8,145,489 or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,049,656. U.S. Pat. No. 8,145,489 or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on January 12, 2015. On February 23, 2016, the ’097 patent issued claiming priority to U.S. Pat. No. 8,145,489. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’097 patent since no later than February 23, 2016. On information and belief, no later than that date, Amazon has known its actions would induce infringement by users of Alexa Products.

165. Amazon has been and is continuing to contributorily infringe the ’097 patent by selling or offering to sell Alexa Products, knowing them to be especially made or especially adapted for practicing the invention of the ’097 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use, in violation of 35 U.S.C. § 271(c). On information and belief, Amazon writes software for Alexa Products and designs Alexa Products to operate in an infringing manner. Amazon causes Alexa Products to be made available through its own website. On information and belief, Amazon also profits from third-parties who sell Alexa Products. Amazon instructs users to use Alexa Products in an infringing manner and provides technical support for such use, including on its website and also through the Alexa virtual assistant. Amazon has known of, or been willfully blind to, the existence of the ’097 patent since no later than it received a copy of this complaint. No later than that date, Amazon

has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, VoiceBox Technologies informed the Amazon employees who attended the February 2, 2017 meeting at VoiceBox Technologies' office of the '097 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the '097 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, the '176 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,152,973. The '176 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on August 10, 2018. As of that date, the '097 patent had issued claiming priority to the '176 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the '097 patent since no later than August 10, 2018. On information and belief, no later than that date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use. Additionally, U.S. Pat. No. 8,145,489 or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,049,656. U.S. Pat. No. 8,145,489 or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on January 12, 2015. On February 23, 2016, the '097 patent issued claiming priority to U.S. Pat. No. 8,145,489. On information and belief, Amazon has known of, or been willfully blind to, the existence of the '097 patent since no later than February 23, 2016. On information and belief, no later than that

date, Amazon has known its Alexa Products are especially made or adapted for a use or product that is both patented and infringing and that there is no substantial non-infringing use.

166. On information and belief, Amazon has known of the existence of the ’097 patent, and its acts of infringement have been willful and in disregard for the ’097 patent, without any reasonable basis for believing that it had a right to engage in the infringing conduct. Amazon has known of, or been willfully blind to, the existence of the ’097 patent since no later than the date it received a copy of this complaint. No later than that date, Amazon has known its Alexa Products infringe the ’097 patent. Additionally, VoiceBox Technologies informed the Amazon employees who attended the February 2, 2017 meeting at VoiceBox Technologies’ office of the ’097 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’097 patent since no later than February 2, 2017. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the ’097 patent. Additionally, the ’176 patent or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,152,973. The ’176 patent or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on August 10, 2018. As of that date, the ’097 patent had issued claiming priority to the ’176 patent. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’097 patent since no later than August 10, 2018. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the ’097 patent. Additionally, U.S. Pat. No. 8,145,489 or its published application was cited during prosecution of one or more patents assigned to a subsidiary of Amazon, including U.S. Patent No. 10,049,656. U.S. Pat. No. 8,145,489 or its published application was first cited during prosecution of one or more patents assigned to a subsidiary of Amazon on January 12, 2015. On February 23, 2016, the

’097 patent issued claiming priority to U.S. Pat. No. 8,145,489. On information and belief, Amazon has known of, or been willfully blind to, the existence of the ’097 patent since no later than February 23, 2016. On information and belief, no later than that date, Amazon has known its Alexa Products infringe the ’097 patent.

167. Amazon’s infringement has been, and continues to be knowing, intentional, and willful.

168. Amazon’s acts of infringement of the ’097 patent have caused and will continue to cause VoiceBox damages for which VoiceBox is entitled to compensation pursuant to 35 U.S.C. § 284.

169. This case is exceptional and, therefore, VoiceBox is entitled to an award of attorney’s fees pursuant to 35 U.S.C. § 285.

PRAYER FOR RELIEF

WHEREFORE, VoiceBox, respectfully requests the Court to enter judgment in favor of VoiceBox and against Amazon as to all claims asserted herein as follows:

a) Adjudging that Amazon has infringed, actively induced infringement of, and contributorily infringed at least one claim of the VoiceBox Patents in violation of 35 U.S.C. §§ 271(a), (b), and/or (c);

b) Ordering Amazon to account and pay damages adequate to compensate VoiceBox for Amazon’s infringement of the VoiceBox Patents, including for any infringing acts not presented at trial and pre-judgment and post-judgment interest and costs, pursuant to 35 U.S.C. § 284;

c) Ordering that the damages award be increased up to three times the actual amount assessed, pursuant to 35 U.S.C. § 284;

d) Declaring this case exceptional and awarding VoiceBox its reasonable attorneys' fees, pursuant to 35 U.S.C. § 285;

e) Awarding VoiceBox interest, including prejudgment and post-judgment interest, on the foregoing sums; and

f) Awarding such other and further relief as this Court deems just and proper.

JURY DEMAND

Pursuant to Federal Rules of Civil Procedure Rule 38, VoiceBox demands a trial by jury on all issues so triable.

Dated: October 9, 2019

WILSON SONSINI GOODRICH & ROSATI
Professional Corporation

/s/ Ian R. Liston

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