IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION

SOUNDCLEAR TECHNOLOGIES LLC, Plaintiff, v. AMAZON.COM, INC.; AMAZON.COM SERVICES LLC; and AMAZON WEB SERVICES, INC., Defendants.	Case No. 1:24-cv-01283-AJT-WBP **JURY TRIAL DEMANDED**

DEFENDANTS' PRELIMINARY INVALIDITY CONTENTIONS

In response to SoundClear's Third Set of Interrogatories (Nos. 25-26), Defendants Amazon.com, Inc., Amazon.com Services LLC, and Amazon Web Services, Inc., (collectively, "Defendants" or "Amazon") hereby provide the following Invalidity Contentions to Plaintiff SoundClear Technologies LLC ("Plaintiff" or "SoundClear") with respect to the asserted claims of U.S. Patent Nos. 11,069,337 (the "'337 patent") and 11,244,675 (the "'675 patent") (collectively, the "Asserted Patents") asserted by Plaintiff in its "Disclosure of Preliminary Infringement Contentions" dated October 28, 2024.[1]

Amazon contends that the Asserted Claims are invalid under at least 35 U.S.C. §§ 101, 102, 103, and 112. Amazon also contends that Amazon's own prior use renders the claims invalid,

[1] On November 8, 2024, the Court found that U.S. Patent No. 9,223,487 is invalid under 35 U.S.C. § 101. (Dkt. 63 at 16.) Accordingly, Amazon does not address the '487 patent in its invalidity contentions.

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at least because Plaintiff accuses Amazon products that existed before the '675 and '337 patent priority dates. *See*, *e.g.*, *Upsher-Smith Labs., Inc. v. Pamlab, LLC*, 412 F.3d 1319, 1322 (Fed. Cir. 2005) ("A century old axiom of patent law holds that a product 'which would literally infringe if later in time anticipates if earlier.'"); *Peters v. Active Mfg. Co.*, 129 U.S. 530, 537 (1889) ("That which infringes, if later, would anticipate, if earlier."). Amazon has included exemplary prior-art citations and statements explaining the invalidity of the Asserted Claims in the following disclosure and claim charts. Amazon also provides exemplary combinations of the prior art and the motivation to combine such references for purposes of its obviousness defenses. Such combinations are exemplary, and Amazon reserves the right to rely on any combination or combinations of the prior art references cited or discussed in these disclosures.

Moreover, Amazon reserves the right to rely on any prior art cited or discussed in the prosecution histories of the Asserted Patents or any related applications, as well as any patents and applications, and any prior art produced by Plaintiff in this action, or identified in any other actions involving one or more of the Asserted Patents as a basis for contending that the claims are invalid. Amazon further identifies as prior art upon which it may rely all statements in the specifications of the Asserted Patents admitted as being prior art to the Asserted Claims, as well as those references identified during prosecution of the Asserted Patents.

Amazon makes these contentions with the protection of Federal Rule of Evidence 502. Thus, to the extent these contentions contain any information that may be protected from discovery under the attorney-client privilege, the attorney work-product immunity or any other applicable privilege or immunity, such disclosure is inadvertent and does not, nor is it intended to, constitute a waiver of any such privilege or immunity.

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Amazon further incorporates its November 4, 2024 objections and responses to Interrogatory Nos. 25 and 26 as if fully stated herein.

I. GENERAL STATEMENTS

A. Reservation of Rights

These contentions are based on information reasonably available to Amazon at this time, and may require subsequent amendment, alteration and/or supplementation. Accordingly, Amazon reserves the right to amend, alter and/or supplement these contentions based on further investigation, fact or expert discovery, evaluation of the scope and content of the prior art, any further claim construction from the Court, or as a result of Plaintiff's asserted claims and contentions. Amazon also reserves the right to rely on any invalidity contentions, including supplements thereto, served by any other defendants in this litigation and related litigation(s) regarding the any one or more of the Asserted Patents. These invalidity contentions may be in the alternative and do not constitute any concession by Amazon for purposes of claim construction or infringement. *See* Fed. R. Civ. P. 8(d).

Furthermore, these contentions are provided without prejudice to Amazon's right to introduce at trial any subsequently discovered evidence or expert opinions relating to currently known facts and to produce and introduce at trial all evidence, whenever discovered, relating to the proof of subsequently discovered facts. Moreover, facts, documents, and things now known may be imperfectly understood and, accordingly, such facts, documents, and things may not be included in the following contentions. Amazon reserves the right to refer to, conduct discovery with reference to, or offer into evidence at the time of trial, any and all facts, expert opinion testimony, documents, and things notwithstanding the written statements herein. Amazon further reserves the right to refer to, conduct discovery with reference to, or offer into evidence at the time of trial, any and all

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facts, documents and things that are not currently recalled but might be recalled at some time in the future.

Amazon objects to the disclosure of information that is protected by the attorney-client privilege, the attorney work-product immunity, the common-interest privilege or any other applicable privilege or immunity. To the extent Amazon inadvertently discloses information that may be protected from discovery under the attorney-client privilege, the attorney work-product immunity, the common-interest privilege or any other applicable privilege or immunity, such inadvertent disclosure does not constitute a waiver of any such privilege or immunity.

Amazon sets forth these contentions without waiving: (1) the right to object to the use of any statement for any purpose, in this action or any other action, on the grounds of privilege, relevance, materiality, or any other appropriate grounds; (2) the right to object to any request involving or relating to the subject matter of the statements herein; or (3) the right to revise, correct, supplement, or clarify any of the statements provided below at any time.

B. Identification of Asserted Claims

The term "Asserted Claims" encompasses any claim currently asserted against Amazon. The Asserted Claims are:

- claims 1, 2, 3, 4, and 5 of the '337 patent; and
- claims 1, 2, 3, 4, 6, and 7 of the '675 patent

(*See* Plaintiff's October 28, 2024, Infringement Contentions.) Amazon contends that each of the Asserted Claims is invalid for at least the reasons set forth herein. Amazon reserves the right to address the invalidity of additional claims of the asserted patents in the future if the need arises.

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C. Priority Dates of the Asserted Patents

The '337 patent was filed on March 4, 2019, and claims priority to JP application No. 2018-039754, filed on March 6, 2018. Accordingly, March 6, 2018, is the earliest possible priority date for the '337 patent.

The '675 patent was filed on March 7, 2019, and claims priority to JP application No. 2018-044598, filed on March 12, 2018. Accordingly, March 12, 2018, is the earliest possible priority date for the '675 patent.

Amazon reserves the right to (i) challenge the Asserted Patents' entitlement to priority from any applications; (ii) challenge any alleged date of conception or reduction to practice; and (iii) identify additional prior art thereto.

D. Claim Construction

To the extent that these Invalidity Contentions reflect constructions of claim terms that may be consistent with or implicit in Plaintiff's Infringement Contentions, no inference is intended, nor should any inference be drawn, that Amazon agrees with such claim constructions. Amazon takes no position on any matter of claim construction in these Invalidity Contentions. Any statement herein describing or tending to describe any claim element is provided solely for the purpose of understanding the relevant prior art or other basis for invalidity. Amazon expressly reserves the right to propose any claim construction and/or contest any claim construction.

These Invalidity Contentions may be made in the alternative and are not necessarily intended to be consistent with each other. Furthermore, Amazon's inclusion of prior art that would render a claim anticipated or obvious based on a particular scope or construction of the claim, including that apparently applied by Plaintiff in its Infringement Contentions, is not, and should in no way be seen as, an adoption or admission as to the accuracy of such scope or construction.

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E. Ongoing Discovery and Disclosures

Discovery in this case is in its early stages, and Amazon's investigation, including Amazon's search for prior art, is ongoing. For example, the Court has not yet entered a Protective Order so Amazon is currently unable to pursue third-party discovery on prior art devices. Amazon therefore reserves the right to further supplement and/or alter the positions taken and information disclosed in these Initial Invalidity Contentions including, without limitation, the prior art and grounds of invalidity set forth herein, to take into account information or defenses that may come to light as a result of these continuing efforts.

Moreover, because expert discovery has not started, Amazon reserves the right to amend these Initial Invalidity Contentions as a result of new information disclosed through the parties' experts. Therefore, Amazon reserves all rights to further supplement and/or amend these Initial Invalidity Contentions if and when further information becomes available.

F. Prior Art Identification and Citation

Concurrent with these Invalidity Contentions, Amazon is serving additional exemplary claim charts (attached hereto as Appendices 1-2). The claim charts include exemplary descriptions and citations of where a particular claim element may be found. However, the citations do not necessarily represent every place where a particular claim element may be found in a prior art reference. Amazon reserves the right to rely on additional, or different, portions of the prior art references and on other publications and expert testimony to provide context and as aids to understanding and interpreting the portions cited. Furthermore, given the volume of relevant prior art, Amazon could not possibly provide written explanations of every possible combination that renders the Asserted Claims invalid. Accordingly, Amazon has provided exemplary combinations and expressly reserves the right to rely on combinations not expressly set forth herein.

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II. IDENTIFICATION OF PRIOR ART

It should be recognized that a person of ordinary skill in the art ("POSITA") would generally read a prior art reference as a whole and in the context of other publications, literature, products, devices, and general knowledge in the field. To understand and interpret any specific statement or disclosure in a prior art reference, a POSITA would rely upon other information including other publications and general knowledge relevant to the subject matter of the Asserted Patents. Amazon, therefore, reserves the right to rely upon other unidentified portions of the prior art references, other publications, other relevant knowledge, and expert testimony to provide context and to aid understanding and interpretation of any identified portions. Amazon notifies Plaintiff that Amazon may rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions were inherently disclosed in the prior art and/or would have been obvious to a POSITA, including based on modifying or combining certain cited references. Amazon also notifies Plaintiff that Amazon may rely on additional evidence and expert analysis to establish the prior-art status of any reference, including, without limitation, that a patent or patent publication is entitled to a certain date for prior-art purposes or that a device was sold or publicly used by a certain date.

Amazon hereby incorporates by reference any rejections made by the Patent and Trademark Office ("PTO") during the prosecution of the application leading to any asserted claim, including but not limited to those from the Asserted Patents. Amazon notifies Plaintiff that Amazon may assert any art cited in the prosecution histories of the Asserted Patents, as a basis for contending that any claim at issue in this litigation is invalid. Amazon further identifies as prior art upon which it may rely those references identified in Information Disclosure Statements during the pros-

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ecution of the Asserted Patents. Amazon notifies Plaintiff that Amazon may rely upon any admissions relating to prior art in the Asserted Patents, or their prosecution histories and those of related applications, such as those including in any priority claim or those that claim priority to the Asserted Patents. In addition, Amazon notifies Plaintiff that Amazon may rely on any and all prior art and any and all evidence of the relevant state of the art produced by Plaintiff.

Amazon further incorporates by reference, in full, all references cited in the following prior art references and their prosecution histories, where applicable. The citations provided are representative of the references and are not exhaustive. To the extent that similar claim limitations occur in one or more claims, the disclosure below should be read to apply to all similar claim limitations. Moreover, many of the references discussed herein are representative of additional prior art references in the relevant field. Thus, Amazon notifies Plaintiff that the various concepts may be discussed in numerous references and that citation to one particular reference does not exclude later citation to other references discussing the same concept.

Amazon reserves the right to rely upon any related patents and patent applications, foreign patent counterparts and foreign patent applications of U.S. patents or applications identified in these Invalidity Contentions, U.S. counterparts of foreign patents or foreign patent applications identified in these Invalidity Contentions, or U.S. and foreign patents or applications corresponding to articles and publications identified in these Invalidity Contentions. For prior art patents and publications identified in these Invalidity Contentions, Amazon notifies Plaintiff that Amazon may rely on inherency, public use, offer for sale, and/or sale of the products described in those prior art patents or publications once Amazon has had an opportunity to take discovery on these subjects.

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Amazon further notifies Plaintiff that Amazon may modify these Invalidity Contentions to add additional prior art in light of the information gained through fact discovery, expert discovery, arguments or positions advanced by Plaintiff, or the Court's claim construction rulings.

Subject to the above, relevant prior art includes at least the following, each of which is prior art to the '337 and '675 patents:

- U.S. Patent Publ. No. 2017/0083281 ("Shin")
- U.S. Patent Publ. No. 2016/0284351 ("Ha")
- Japanese Unexamined Patent Application Publication No. 2005-202076 ("Shimomura")
- U.S. Patent No. 10,147,439 ("Kristjansson")
- U.S. Patent No. 9,489,172 ("Iyer")
- U.S. Patent Publ. No. 2017/0337921 ("Aoyama")
- U.S. Patent Publ. No. 2019/0103127 ("Tseretopoulos")
- U.S. Patent Publ. No. 2018/0357306 ("Osotio")
- U.S. Patent Publ. No. 2018/0061408 ("Andreas")
- U.S. Patent Publ. No. 2017/0154626 ("Kim")
- U.S. Patent No. 11,183,167 ("Iwase")
- U.S. Patent No. 9,680,983 ("Schuster")
- U.S. Pat. No. 8,848,932 ("Poulsen")
- Amazon Echo
- Google Home, Home Max, and Nest ("Google Home devices")
- Apple HomePod
- Sonos One
- Sony Aibo

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Amazon incorporates prior art asserted in any post-grant proceedings, including *inter partes* review proceedings, involving any of the asserted patents. Amazon hereby incorporates by reference as if set forth in full herein the bases for invalidity set forth in the following *inter partes* review proceedings (including but not limited to the petitions, the accompanying expert declarations, reply briefs, etc.) :

- *Amazon.com, Inc. v. SoundClear Technologies LLC*, IPR2025-00565
- *Amazon.com, Inc. v. SoundClear Technologies LLC*, IPR2025-00673

Amazon reserves the right to supplement and/or amend these Initial Invalidity Contentions to further incorporate any invalidity arguments made by third parties, including Google, in subsequent or parallel proceedings involving any of the asserted patents.

Amazon further incorporates by reference as if set forth in full herein any invalidity contentions from third parties regarding the '337 and '675 patents, including any invalidity contentions served by the defendant in *SoundClear Technologies LLC v. Google LLC*, Case Nos. 1-24-cv-01281 and 3-24-00540 (E.D. Va.) or any other litigation in which the '337 or '675 patents are asserted.

A. U.S. Patent Publ. No. 2017/0083281 ("Shin")

Shin was published on March 23, 2017, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Thus, Shin is prior art against the '337 and '675 patents under at least 35 U.S.C. § 102(a).

Shin discloses a method of providing output content in response to a voice input. (Shin at Abstract.) Shin disclosed using a "distance detection module" or "proximity sensor" to "compute a distance between a user and the electronic device." (*Id*. at ¶¶ [0066], [0153], [0053], [0075],

[0077], Figs. 5A, 9.) "According to embodiments of the present disclosure, in operation 501, the electronic device 101 may measure a distance between the user and the electronic device 101 through the distance detection module 180." (*Id.* at ¶ [0075] (describing Figure 5A).)

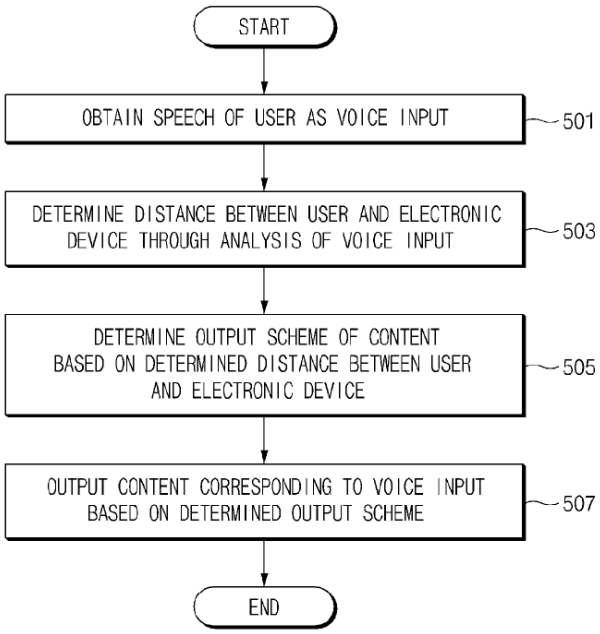


FIG.5A

(*Id.* at Fig. 5A.) Shin's device classified voice input based on distance and then tailored the output. For users within 1 meter, the device output "detailed content" at a lower volume (e.g., 40 dB). (Ex. 1003 ¶¶[0051], [0088], Tables 1, 3.) For users more than 1 meter away, it output "abbreviated content" at a higher volume (e.g., 45 dB or more). (*Id.*; Ex. 1002 ¶43.)

For example, if a user said, "Let me know today's weather," Shin's device obtained weather-related information and may respond with: "The weather in Jul. 1, 2015 is (①) rainy after cloudy (②). The highest temperature is 28° C., and the lowest temperature is 18° C. (③), the rainfall is 10 mm (④). Prepare your umbrella when you go out. (⑤)." (Ex. 1003 ¶[0088].) If the voice was classified as near (e.g., less than 1 meter away), all five categories of information were provided. (*Id.*) If the voice was classified as farther away (e.g., between 1 and 2 meters), category

⑤ was omitted. (*Id.*) And, if the voice was classified as even farther away (e.g., greater than 4 meters), all but category ② was omitted. (*Id.*)

B. U.S. Patent Publ. No. 2016/0284351 ("Ha")

Ha was published on September 29, 2016, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Thus, Ha is prior art against the '337 and '675 patents under at least 35 U.S.C. § 102(a).

Ha discloses an electronic device configured to receive a voice output, and to output different information based on an identified user. For example, Ha discloses that "if it is determined that an authenticated user of the electronic device 100 is included in the shot video, the processor 120 may determine to control the audio output module 150 . . . to output detailed information of content. In contrast, if it is determined that an unauthenticated user is included in the shot video, the processor 120 may determine to control the audio output module 150 . . . to output abstract information of content or not to output information of content." (Ha at ¶ [0053].)

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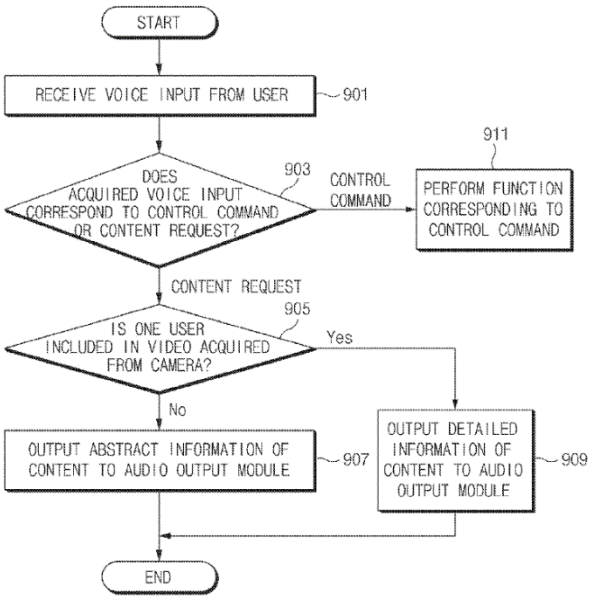


FIG.9

(*Id.* at Fig. 9.)

C. Japanese Unexamined Patent Application Publication No. 2005-202076 ("Shimomura")

Shimomura was published on October 28, 2005, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Thus, Shimomura is prior art against the '337 and '675 patents under at least 35 U.S.C. § 102(a).

Shimomura discloses a robot device with speech recognition and distance detection functionality. Shimomura's device includes cameras for determining the distance between the device and the user. (Shimomura at ¶¶[0039], [0093].) The device classifies the user's speech based on distance (e.g., whether the user is more or less than 350 cm from the device) and then adjusts the

output content (e.g., including or omitting words) accordingly. (*Id*. at ¶¶[0049]-[0050], [0057]-[0058], [0085], [0088], [0092].)

D. U.S. Patent No. 10,147,439 ("Kristjansson")

Kristjansson was filed on March 30, 2017, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Kristjansson was issued on December 4, 2018 and names different inventors than the '337 and '675 patents. Thus, Kristjansson is prior art against the '337 and '675 patents under 35 U.S.C. § 102(a)(2).

Kristjansson discloses a "speech processing system" that is "capable of performing traditional speech processing" and "may execute certain commands, such as answering spoken utterances of the users." (Kristjansson at 2:45-67.) In particular, Kristjansson discloses that to do so, the system includes "an NLU component" that "takes textual input (such as processed from ASR [automatic speech recognition] 450 based on the utterance input audio 11 [from the user]) and … derive[s] an intent or a desired action from the user[.]" (*Id.* at 7:26-67.) Upon determining the user's intent, the system sends that intent information to a "command processor 490," which retrieves content based on that intent. (*Id.* at 10:38-11:12.) The retrieved content is delivered to the user. (*Id.* at 10:38-11:12.)

E. U.S. Patent No. 9,489,172 ("Iyer")

Iyer was issued on November 8, 2016, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Thus, Iyer is prior art against the '337 and '675 patents under at least 35 U.S.C. § 102(a).

Iyer discloses an electronic device that processes and audibly responds to speech commands in discreet and normal modes. (Iyer at Abstract, 3:8-15.) Iyer notes that "a user may not

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want passersby to hear the audible output[,]" especially when the output includes personal information. (*Id*. at 3:19-27, 4:30-36.) Iyer's device can adjust the output volume of content based on a detected distance to a user. (*Id*. at 3:19-27, 7:47-8:3, 12:6-17.)

F. U.S. Patent Publ. No. 2017/0337921 ("Aoyama")

Aoyama was published on November 23, 2017, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Thus, Aoyama is prior art against the '337 and '675 patents under at least 35 U.S.C. § 102(a).

Aoyama discloses a mobile device that analyzes speech input, executes processing, and audibly outputs the result. (Aoyama at ¶¶ [0161], [0127], [0253].) The device customizes its output by replacing words based on the user or situation. (*Id*. at ¶¶ [0138]-[0140], [0177], [0218].) For example, the device may refer to a table and replace names such as "Taro Yamada" with "Mr. Yamada" in its output. (*Id.* at ¶¶ [0138], [0140].)

G. U.S. Patent Publ. No. 2019/0103127 ("Tseretopoulos")

Tseretopoulos was filed on October 4, 2017, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Tseretopoulos was published on April 4, 2019. Thus, Tseretopoulos is prior art against the '337 and '675 patents under 35 U.S.C. § 102(a)(2).

Tseretopoulos discloses systems, software, and methods for personalizing interactions within a conversational interface based on an input context. (Tseretopoulos at Abstract.) Tseretopoulos teaches that "the response content identified by the system 102 can be modified to include or be associated with similar or related characteristics as those of the received input." (*Id*. at ¶ [0041].) Thus, to more effectively personalize the response provided to the user, the system can

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replace words in the response with synonyms to generate a modified version of the response that is then provided to the user. (*E.g.*, *id.* at ¶ [0004], Abstract.)

H. U.S. Patent Publ. No. 2018/0357306 ("Osotio")

Osotio was filed on June 13, 2017, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Osotio was published on December 13, 2018 and names different inventors than the '337 and '675 patents. Thus, Osotio is prior art against the '337 and '675 patents under 35 U.S.C. § 102(a)(2).

Osotio discloses a digital personal assistant which receives a user speech input and generate a speech response. (Osotio at ¶ [0069].) The device can tailor outputs based on facts inferred about the user or a context of use. (*Id*. at ¶ [0051].)

I. U.S. Patent Publ. No. 2018/0061408 ("Andreas")

Andreas was published on March 1, 2018, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Thus, Andreas is prior art against the '337 and '675 patents under at least 35 U.S.C. § 102(a).

Andreas discloses an automated assistant that recognizes speech and provides a response to a user. (Andreas at Abstract.) The device includes a translator which "may process a generated response to make the response sound more natural." (*Id*.) "The translator may replace content of the generated response with paraphrase content based on the state of the conversation with the user, including salience data." (*Id*.)

J. U.S. Patent Publ. No. 2017/0154626 ("Kim")

Kim was published on June 1, 2017, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest

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possible effective filing date of the ’675 patent. Thus, Kim is prior art against the ’337 and ’675 patents under at least 35 U.S.C. § 102(a).

Kim discloses an electronic device that outputs short or descriptive answers.

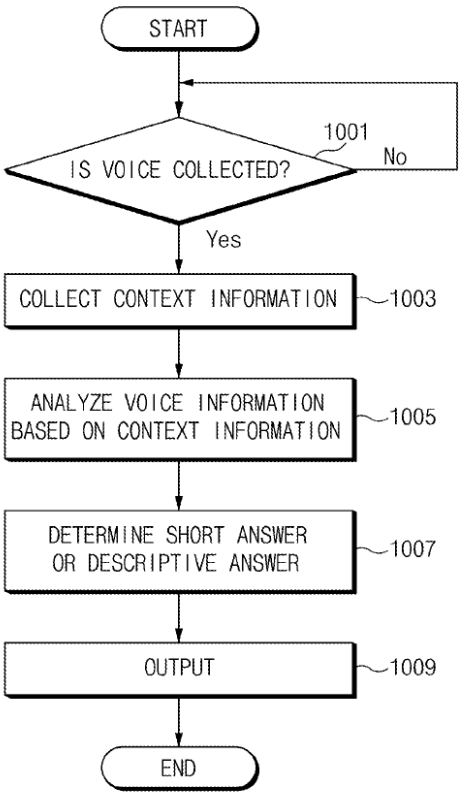


FIG.10A

(Kim at Fig. 10A.) “For example, if generating the additional information, the additional information generation module 123 may replace words having the same meaning among words included in the additional information with words included in the analects of the user.” (*Id.* at ¶ [0090].) Furthermore, Kim’s device can use a “proximity sensor” to detect “distance information” (i.e. the distance between a user and the device). (*Id.* at ¶ [0068] (“The sensor 180 may

include … a proximity sensor …. According to an example embodiment, the sensor 180 may collect … distance information from [the user]").)

K. U.S. Patent No. 11,183,167 ("Iwase")

Iwase was filed on December 25, 2017, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Iwase was issued on November 23, 2021, and names different inventors than the '337 and '675 patents. Thus, Iwase is prior art against the '337 and '675 patents under 35 U.S.C. § 102(a)(2).

Iwase describes a mobile device that audibly presents notification information to users. (Iwase at 3:26-29, 5:10-13, Abstract.) To enhance comprehension, the device adjusts the notification's subject based on user attributes, thus tailoring its voice output by replacing certain words. (*Id.*; *id.* at 1:54-57, 4:17-29, 12:31-34, 15:6-14.) For example, the phrase "I recommend bringing an umbrella" may be modified by replacing "I recommend" with "You should," resulting in "You should take an umbrella." (*Id.* at 15:6-14.)

L. U.S. Patent No. 9,680,983 ("Schuster")

Schuster was issued on June 13, 2017, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Thus, Schuster is prior art against the '337 and '675 patents under at least 35 U.S.C. § 102(a).

Schuster discloses an electronic device (e.g., mobile communication device) with a processor that interacts with a user by receiving verbal queries and providing voice outputs like search answers or recommendations. (Schuster at Abstract, 1:7-11, 3:31-39, 7:18-20.) Schuster's device "enters a private communication mode with the user when the user's preceding voice interaction

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with the device is whispered." (*Id*. at 2:59-62.) The private mode alters the device's communication behavior by, for example, "significantly lower[ing] the volume of the speech" (*id.* at 3:31-39), which ensures privacy, prevents social awkwardness, and maintains confidentiality. (*Id*. at Abstract, 2:62-67.)

M. U.S. Pat. No. 8,848,932 ("Poulsen")

Poulsen was issued on September 30, 2014, and therefore before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. Thus, Poulsen is prior art against the '337 and '675 patents under at least 35 U.S.C. § 102(a).

Poulsen describes an audio system that "operates by detecting a distance to a user of the mobile device using a proximity sensor and controlling volume output of the at least one speaker based on the distance to the user of the mobile device and the operational status of the proximity sensor." (Poulsen at Abstract.)

N. Amazon Echo

The Amazon Echo Dot first generation was released in March 2016. The Amazon Echo Dot second generation was released in October 2016. The Amazon Echo Show was released in May 2017. The Amazon Top was released in March 2016. The Amazon Echo Look was released in April 2017. The Amazon Echo Spot was released in September 2017. The Amazon Echo Plus was released in October 2017. These devices will collectively be referred to as the "Amazon Echo devices" in these invalidity contentions. These Amazon Echo devices were released before March 6, 2018, which is the earliest possible effective filing date of the '337 patent, and March 12, 2018, which is the earliest possible effective filing date of the '675 patent. (*See* https://www.digitaltrends.com/home/history-of-amazon-echo/#dt-heading-amazon-echo-show.) Thus, at least these Amazon Echo devices were in public use, on sale, or otherwise available to the

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public prior to the effective filing date of the ’337 and ’675 patents, and are thus prior art against the ’337 and ’675 patents under 35 U.S.C. § 102(a)(1).

O. Google Home, Home Max, and Nest

The Google Home, Home Max, and Nest (“Google Home devices”) were in public use, on sale, or otherwise available to the public prior to March 6, 2018, the effective filing date of the ’337 patent, and March 12, 2018, which is the earliest possible effective filing date of the ’675 patent, and are thus prior art against the ’337 and ’675 patents under 35 U.S.C. § 102(a)(1). (*See*, *e.g.*, https://www.theverge.com/2017/12/20/16797728/google-home-max-smart-speaker-assistant-review; https://www.engadget.com/2016-11-03-google-home-review.html.)

P. Apple HomePod

The Apple HomePod was in public use, on sale, or otherwise available to the public prior to March 6, 2018, the effective filing date of the ’337 patent, and March 12, 2018, which is the earliest possible effective filing date of the ’675 patent, and is thus prior art against the ’337 and ’675 patents under 35 U.S.C. § 102(a)(1). (*See* https://www.apple.com/newsroom/2018/01/homepod-arrives-february-9-available-to-order-this-friday/.)

Q. Sonos One

The Sonos One was in public use, on sale, or otherwise available to the public prior to March 6, 2018, the effective filing date of the ’337 patent, and March 12, 2018, which is the earliest possible effective filing date of the ’675 patent, and is thus prior art against the ’337 and ’675 patents under 35 U.S.C. § 102(a)(1). (*See* https://www.engadget.com/2017-10-18-sonos-one-review.html.)

R. Sony Aibo

The Sony Aibo was in public use, on sale, or otherwise available to the public prior to March 6, 2018, the effective filing date of the ’337 patent, and March 12, 2018, which is the earliest

possible effective filing date of the ’675 patent, and is thus prior art against the ’337 and ’675 patents under 35 U.S.C. § 102(a)(1). (*See* https://www.sony.com/en/SonyInfo/News/Press/201711/17-105E/.)

III. MOTIVATION TO COMBINE

Any required motivation to combine the prior art references discussed in these Invalidity Contentions is found, explicitly or implicitly, in one or more of the following:

- A person of ordinary skill in the art’s own knowledge or common sense;
- The prior art references themselves;
- The subject matter acknowledged as prior art in the Asserted Patents;
- The interrelated teachings of the multiple prior art references identified herein;
- The nature of the problem purportedly solved by the Asserted Patents;
- The ability to implement the alleged invention as a predictable variation of the prior art;
- Improvements in similar products;
- Any needs or problems known in the field and purportedly addressed by the Asserted Patents;
- The number of predictable solutions to the problem(s) purportedly addressed by the Asserted Patents;
- Reasonable expectations of a person having ordinary skill in the art that known prior art elements would maintain their respective properties or functions when they were combined;
- Express or implied reasons known by a person having ordinary skill in the art to combine known prior art elements and knowledge of how to combine those known prior art elements;
- Expectation that known prior art elements were capable of being combined, as well as the expectation that the combinations would have worked for their intended purpose;

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- Express and/or implied teachings from the prior art as to why a person of ordinary skill would have combined known elements; and
- It is obvious to try a combination of prior art elements where the options to solve a known problem were finite and predictable.

Each combination of the prior art disclosed herein would have no unexpected results, and at most would simply represent a known alternative to a POSITA. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415-17 (2007) (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, and instead espousing an "expansive and flexible" approach). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id*. at 420.

One or more combinations of the prior art references identified herein would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to try combining the prior art references identified herein because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. In addition, the combination of the prior art references identified herein would have been obvious because the combination represents the known potential options with a reasonable expectation of success.

Additional evidence that there would have been a motivation to combine the prior art identified herein includes the interrelated teachings of multiple prior art references; the effects of demands known to the design community or present in the marketplace; the existence of a known

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problem for which there was an obvious solution encompassed by the Asserted Claims; the existence of a known need or problem in the field of the endeavor at the time of the invention(s); and the background knowledge that would have been possessed by a person having ordinary skill in the art. Thus, a skilled artisan seeking to solve this problem would look to these cited references in combination.

Thus, the motivation to combine the teachings of the prior art references disclosed herein is found in the references themselves and: (1) the nature of the problem being solved, (2) the express, implied and inherent teachings of the prior art, (3) the knowledge of persons of ordinary skill in the art, (4) the fact that the prior art is generally directed towards relevant methods and systems, or (5) the predictable results obtained in combining the different elements of the prior art.

It was well known before the earliest effect priority date of the Asserted Patents that electronic devices could be designed to include a proximity sensor to detect a distance from the device to a user, and a POSITA would have been particularly motivated to do so in user interactive devices, such as voice-content control devices, which were becoming increasingly prominent by 2018. It also was well known at the time that such devices could analyze and/or classify a user's voice and formulate a voice output based on a number of properties (or "feature values"), such as a user-to-device distance. Furthermore, choosing which of these properties to use in a particular device involved a design choice (from a finite number of predictable options) based on several factors, including (1) the desired interactive range of the device (how far a user is expected to be from the device under normal operating conditions), (2) the environments in which the device is to be used (e.g., in public vs. in private), and (3) privacy concerns associated with use of the device.

These types of considerations are confirmed for example, by at least the following:

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- Shimomura at ¶ [0070] (discussing the distance between the device and a conversation partner);
- Schuster at Abstract, 2:62-67 (disclosing a private communication mode to ensure privacy, prevent social awkwardness, and maintain confidentiality); and
- Iyer at Abstract, 3:8-15 (disclosing a discrete mode for speech processing to maintain privacy of personal information).

The above noted motivations, as well as additional specific rationales discussed in the following bases of invalidity for the Asserted Claims, are incorporated by reference in all obviousness combinations and claim charts. In addition, Amazon expects expert analysis of the printed and product prior art references, including, without limitation, inspections, tests, simulations, teardowns, and analysis of background information, to demonstrate additional motivations to combine or reasons a POSITA would reasonably expect success or, or to further demonstrate the motivations to combine or reasons a POSITA would reasonably expect success set forth herein. Amazon intends to rely on any additional evidence of motivations to combine or reasons a POSITA would reasonably expect success resulting from such expert analysis.

A. The ’337 Patent

Each of the identified prior art references constitutes analogous art and may be used in an obviousness combination. *See Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1000 (Fed. Cir. 2016). Each of the asserted prior art references address the same fields of endeavor as the ’337 patent, e.g., controlling a device’s voice output. The references are also pertinent to problems the inventor of the ’337 patent was focused on, e.g., adjusting voice output to improve user interaction. ’337 patent, 1:29-64. A person of ordinary skill in the art would have known the structures and techniques identified in the references could be applied to voice control devices, and indeed, the

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vast majority of the references apply these techniques to voice control devices. As analogous art, a person of ordinary skill in the art is presumed to have been aware of these references. *In re Nilssen*, 851 F.2d 1401, 1403 (Fed. Cir. 1988).

A POSITA would have had multiple reasons to modify prior-art voice control devices in view of teachings in one or more of the identified prior art references, such as design incentives and/or market forces, and would have known that such a modification would have had predictable results. As admitted in the '337 patent, many prior devices were designed to detect and process user voice inputs and provide a text or speech output. For example, Shin discloses such a device, which includes a proximity sensor and voice classifying unit. A POSITA would have been motivated to implement the teachings of Shin into other devices to gain the benefits taught by Shin.

A. The '675 Patent

Each of the identified prior art references constitutes analogous art and may be used in an obviousness combination. *See Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1000 (Fed. Cir. 2016). Each of the asserted prior art references address the same fields of endeavor as the '675 patent, e.g., controlling a device's voice output. The references are also pertinent to problems the inventor of the '675 patent was focused on, e.g., adjusting the voice output to improve user interaction. '675 patent, 1:28-61. A person of ordinary skill in the art would have known the structures and techniques identified in the references could be applied to voice control devices, and indeed, the vast majority of the references apply these techniques to voice control devices. As analogous art, a person of ordinary skill in the art is presumed to have been aware of these references. *In re Nilssen*, 851 F.2d 1401, 1403 (Fed. Cir. 1988).

A POSITA would have had multiple reasons to modify prior-art voice control devices in view of teachings in one or more of the identified prior art references, such as design incentives and/or market forces, and would have known that such a modification would have had predictable

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results. As admitted in the '675 patent, prior devices analyzed a detected voice of a user and perform processing according to an intention of the user. '675 patent, 1:20-27. For example, Shin discloses such a device, which includes a proximity sensor and voice classifying unit. A POSITA would have been motivated to implement the teachings of Shin into other devices to gain the benefits taught by Shin.

IV. INVALIDITY OF THE '337 PATENT

A. Background

The '337 patent describes an electronic device that analyzes a user's voice and generates responsive output sentences. ('337 patent at Abstract.) The patent admits that voice control devices existed prior to the '337 patent, including devices that analyze a detected voice and provide an output based on the user's intent. (*Id.* at 1:21-28.)

The '337 patent's purported advance over the prior art is to decrease the sound volume of the output, for example, if a person around the device is sleeping. (*Id*. at 1:29-42.) The '337 patent purports to fix this problem by classifying a detected voice and adjusting the output based on the classification. (*Id*. at 1:48-2:27.)

B. Invalidity Under 35 U.S.C. §§ 102 and/or 103

Based on Amazon's present understanding of the asserted claims of the '337 patent, the prior art references identified above and charted in Appendix 1 (providing representative examples of where each element of each claim is found in the cited prior art) would have anticipated and/or rendered obvious all asserted claims of the '337 patent, alone or in combination. The discussion below identifies and summarizes invalidity under anticipation and obviousness but is not intended to identify every portion of the prior-art references that disclose every limitation of the Asserted Claims. Additional details about the disclosures of the prior art references are included in Appendix 1.

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1. Shin alone or in view of Shimomura

Shin anticipates and renders obvious every claim of the ’337 patent. Moreover, Shin in combination with Shimomura and/or other secondary references renders obvious every asserted claim of the ’337 patent. (*See* Appendix 1.)

Moreover, if Shin is interpreted as lacking any claimed feature of the asserted claims, it would have been obvious to add such a feature to Shin in view of a POSITA’s knowledge, Shimomura, and/or other secondary references. For example, if Shin is interpreted as not disclosing claim 2’s additional limitations, claim 2 would nevertheless have been obvious over Shin, because Shin’s processor analyzes voice input to identify content the user is interested in, and then acquires and provides that content. (*See* Appendix 1, claim 2.) A POSITA would have recognized that implementing an “intention analyzing unit” to extract the user’s intent, alongside an “acquisition content information acquiring unit” to retrieve content based on the extracted intention, would have been a predictable and logical extension of Shin’s functionalities.

Additional details and motivations for this combination are set forth in IPR2025-00565, which are incorporated by reference herein.

2. Shimomura alone or in view of Shin and/or other secondary references

Shimomura anticipates and renders obvious each asserted claim of the ’337 patent. (*See* Appendix 1.) Moreover, Shimomura in combination with Shin and/or other secondary references renders obvious each of the asserted claims. (*Id*.)

Moreover, if Shimomura is interpreted as lacking any limitation of the asserted claims, it would have been obvious to add such limitation to Shimomura in view of Shin and/or other secondary references. For example, regarding limitation 1[g], Shimomura discloses that its control unit implements the speech synthesis unit to “determine[] the reference volume read from the ref-

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erence volume memory unit 49 as the current speech volume, and when the distance to the conversation partner is in the range of 50 to 80 cm, determines a volume that is a predetermined specified value (for example, '1') higher than the reference volume as the current speech volume, and similarly thereafter, when the distance to the user is 80 to 150 cm, 150 to 250 cm, or 250 cm or more, determines a volume that is '2', '3', or '5' higher than the reference volume as the current speech volume." (Shimomura at ¶ [0070].) If Shimomura is interpreted as not disclosing limitation 1[g], it would have been obvious to a POSITA that the device disclosed in Shimomura could have been modified in view of Shin, which discloses adjusting output volume based on a user-to-device distance. (*See* Shin at ¶¶ [0077]-[0081].) For example, Shin discloses that the "device 101 may set an output volume level of the content to 40 dB when the distance between the user and the electronic device 101 is less than 1 m and may increase the output volume level by 5 dB whenever the distance increases by 1 m." (*Id.* at ¶ [0080], Table 1.) A POSITA would have been motivated to modify Shimomura's device with the techniques taught by Shin in order to further ensure that its output volume is audible at a larger range of distances.

Additional details and motivations for this combination are set forth in IPR2025-00565, which are incorporated by reference herein.

3. Shin and/or Shimomura in view of Kristjansson

Shin and/or Shimomura, in view of Kristjansson, render obvious each asserted claim of the '337 patent. (*See* Appendix 1.)

It would have been obvious to a POSITA to modify Shin and/or Shimomura to include speech processing to provide an output including information acquired in response to using natural language understanding (NLU) to determine the user's intent, as taught by Kristjansson. Such a modification applies a known technique (Kristjansson's NLU processing to determine a user's

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intent) to a known device (Shin and/or Shimomura's devices) to achieve predictable results (providing the user with desired content).

Additional details and motivations for this combination are set forth in IPR2025-00565, which are incorporated by reference herein.

4. Iyer in view of Shin and/or Ha

Iyer, in view of Shin, Ha, and/or other secondary references, renders obvious each asserted claim of the '337 patent. (*See* Appendix 1.)

Iyer discloses adjusting the output volume of content based on a detected distance to a user. (*See, e.g.*, Iyer at Abstract, 3:19-27, 7:47-8:3, 12:6-17.) It would have been obvious to a POSITA, in view of Shin and/or Ha, to modify Iyer to also implement distance-based content abbreviation/simplification. A POSITA would have been motivated to make such a modification to further address the privacy concerns recognized by Iyer. (*Id.* at Abstract, 3:8-15.)

5. Amazon Echo Devices in view of Shin and/or Shimomura

The Amazon Echo devices, in view of Shin and/or Shimomura, render obvious each asserted claim of the '337 patent. (*See* Appendix 1.)

The Amazon Echo devices are prior art products capable of performing speech processing. It would have been obvious to a POSITA to modify the Amazon Echo devices to include the speech processing functionality of Shin and/or Shimomura to determine the distance between a speaker and the device and adjust the output content and volume based on the at distance, as disclosed by the prior art. Such a modification applies a known technique (calculating a user-to-device distance and adjusting the output content and volume based on that distance) to a known device (Amazon Echo devices) to achieve predictable results (Amazon Echo devices that tailor the output and volume based on distance). It also would have been obvious to modify Shin's or Shimomura's devices

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to implement the voice acquisition, intent determination, information acquisition, and voice output features taught by the Amazon Echo devices.

6. Google Home Devices in view of Shin and/or Shimomura

The Google Home devices, in view of Shin and/or Shimomura, render obvious each asserted claim of the '337 patent. (*See* Appendix 1.)

The Google Home devices are prior art products capable of performing speech processing. It would have been obvious to a POSITA to modify the Google Home devices to include the speech processing functionality of Shin and/or Shimomura to determine the distance between a speaker and the device and adjust the output content and volume based on the at distance, as disclosed by the prior art. Such a modification applies a known technique (calculating a user-to-device distance and adjusting the output content and volume based on that distance) to a known device (Google Home devices) to achieve predictable results (Google Home devices that tailor the output and volume based on distance). It also would have been obvious to modify Shin's or Shimomura's devices to implement the voice acquisition, intent determination, information acquisition, and voice output features taught by the Google Home devices.

7. Apple HomePod Device in view of Shin and/or Shimomura

The Apple HomePod device, in view of Shin and/or Shimomura, renders obvious each asserted claim of the '337 patent. (*See* Appendix 1.)

The Apple HomePod device is a prior art product capable of performing speech processing. It would have been obvious to a POSITA to modify the Apple HomePod device to include the speech processing functionality of Shin and/or Shimomura to determine the distance between a speaker and the device and adjust the output content and volume based on the at distance, as disclosed by the prior art. Such a modification applies a known technique (calculating a user-to-device distance and adjusting the output content and volume based on that distance) to a known

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device (Apple HomePod device) to achieve predictable results (Apple HomePod device that tailors the output and volume based on distance). It also would have been obvious to modify Shin's or Shimomura's devices to implement the voice acquisition, intent determination, information acquisition, and voice output features taught by the Apple HomePod device.

8. Sonos One Device in view of Shin and/or Shimomura

The Sonos One device, in view of Shin and/or Shimomura, renders obvious each asserted claim of the '337 patent. (*See* Appendix 1.)

The Sonos One device is a prior art product capable of performing speech processing. It would have been obvious to a POSITA to modify the Sonos One device to include the speech processing functionality of Shin and/or Shimomura to determine the distance between a speaker and the device and adjust the output content and volume based on the at distance, as disclosed by the prior art. Such a modification applies a known technique (calculating a user-to-device distance and adjusting the output content and volume based on that distance) to a known device (Sonos One device) to achieve predictable results (Sonos One device that tailors the output and volume based on distance). It also would have been obvious to modify Shin's or Shimomura's devices to implement the voice acquisition, intent determination, information acquisition, and voice output features taught by the Sonos One device.

9. Sony Aibo Device in view of Shin and/or Shimomura

The Sony Aibo device, in view of Shin and/or Shimomura, renders obvious each asserted claim of the '337 patent. (*See* Appendix 1.)

The Sony Aibo device is a prior art product capable of performing speech processing. It would have been obvious to a POSITA to modify the Sony Aibo device to include the speech processing functionality of Shin and/or Shimomura to determine the distance between a speaker and the device and adjust the output content and volume based on the at distance, as disclosed by

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the prior art. Such a modification applies a known technique (calculating a user-to-device distance and adjusting the output content and volume based on that distance) to a known device (Sony Aibo device) to achieve predictable results (Sony Aibo device that tailors the output and volume based on distance). It also would have been obvious to modify Shin's or Shimomura's devices to implement the voice acquisition, intent determination, information acquisition, and voice output features taught by the Sony Aibo device.

10. Amazon Echo Devices, Google Home Devices, Apple HomePod Device, Sonos One Device, Sony Aibo Device, Shin, and/or Shimomura in further view of Kristjansson

Each of the above-described devices, in view of Shin and/or Shimomura and in further view of Kristjansson, renders obvious each asserted claim of the '337 patent. (*See* Appendix 1.) It would have been obvious to a POSITA to modify the devices in view of the references' teachings for at least the reasons discussed above.

C. Invalidity Under 35 U.S.C. § 101

The claims of the '337 patent are invalid for claiming unpatentable subject matter under § 101. Amazon incorporates by reference as if set forth in full herein its Motion to Dismiss (Dkt. 32) and Reply thereto (Dkt. 38).

The claims of the '337 patent are directed to the abstract idea of collecting and analyzing information, and presenting results. For example, the claims recite classifying a voice based on a distance and tailoring output based on that classification. Such a claim is directed to an abstract idea. *See Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353-54 (Fed. Cir. 2016) ("analyzing information … by mathematical algorithms" is abstract).

The asserted claims are also directed to an abstract idea because they fail to specify *how* to achieve the results the claims recite. *See Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1342 (Fed. Cir. 2017) ("[T]he claim language here provides only a result-oriented

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solution, with insufficient detail for how a computer accomplishes it. Our law demands more."). Such claims are directed to abstract ideas rather than technological solutions. *Ericsson Inc. v. TCL Commc'n Tech. Holdings Ltd.*, 955 F.3d 1317, 1328 (Fed. Cir. 2020) (holding claims abstract because they recited "functions in general terms, without limiting them to technical means for performing the functions"); *Interval Licensing*, 896 F.3d at 1343; *Two-Way Media Ltd. v. Comcast Cable Commc'ns*, *LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (claims are abstract if they recite merely "generic functional language to achieve [the] purported solutions" without claiming "*how* the desired result is achieved"); *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1244 (Fed. Cir. 2016); *Elec. Power*, 830 F.3d at 1351.

Moreover, the asserted claims recite no inventive concept, because the recited steps are performed using entirely conventional electronic components, such as a microphone, proximity sensor, and output controller. The '337 specification confirms that only conventional components, such as a microphone, speaker, and CPU are used to perform the claimed methods. ('337 patent at 3:22-23, 3:31-34, 3:50-51.) Such conventional components fail to supply an inventive concept. *Hawk Tech. Sys., LLC v. Castle Retail*, *LLC*, 60 F.4th 1349, 1359 (Fed. Cir. 2023).

Accordingly, each asserted claim of the '337 patent is invalid under 35 U.S.C. § 101.

V. INVALIDITY OF THE '675 PATENT

A. Background

The '675 patent describes an "output-content control device" that analyzes a user's voice and generates a response. ('675 patent, Abstract.) The device may include a "proximity sensor" for calculating the distance to the user, which is then used to classify a voice as either a first voice or a second voice. (*Id*. at 10:32-38.) The patent admits that voice control devices existed prior to the '675 patent, including devices that analyzed a detected voice and provided an output based on the user's intent. (*Id*., Background.)

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The ’675 patent’s purported advance over the prior art is “to make a content of notification in response to an inquiry of a user difficult to be understood by people other than the user when the content of notification is output.” (*Id*.) The ’675 patent purports to fix this problem by classifying a detected voice and adjusting the output based on the classification. (*Id*., 1:41-2:29.)

B. Invalidity Under 35 U.S.C. §§ 102 and/or 103

Based on Amazon’s present understanding of the asserted claims of the ’675 patent, the prior art references identified above and charted in Appendix 2 (providing representative examples of where each element of each claim is found in the cited prior art) would have anticipated and/or rendered obvious all asserted claims of the ’675 patent, alone or in combination. The discussion below identifies and summarizes invalidity under anticipation and obviousness but is not intended to identify every portion of the prior-art references that disclose every limitation of the Asserted Claims. Additional details about the disclosures of the prior art references are included in Appendix 2.

1. Shin alone or in view of Shimomura and/or secondary references

Shin, alone or in combination with Shimomura and/or other secondary references, renders obvious each asserted claim of the ’675 patent. (*See* Appendix 2.)

If Shin is interpreted as lacking any limitation of the asserted claims, it would have been obvious to add such a limitation to Shin in view of a POSITA’s knowledge, Shimomura, and/or other secondary references. For example, if Shin is interpreted as not disclosing claim 1’s word replacement limitations, claim 1 would nevertheless have been obvious over Shin, because a POSITA would have readily understood Shin’s disclosure of abbreviating content to describe it more simply or provide the “gist” as including replacing words. (*See* Shin at ¶¶ [0051], [0087].) Moreover, if Shin is interpreted as not disclosing claim 2’s additional limitations, claim 2 would

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nevertheless have been obvious over Shin, because Shin's processor analyzes voice input to identify content the user is interested in, and then acquires and provides that content. (*See* Appendix 2, claim 2.) A POSITA would have recognized that implementing an "intention analyzing unit" to extract the user's intent, alongside an "acquisition content information acquiring unit" to retrieve content based on the extracted intention, would have been a predictable and logical extension of Shin's functionalities.

Additional details and motivations for this combination are set forth in IPR2025-00673, which are incorporated by reference herein.

2. Shin in view of Aoyama

Shin, in view of Aoyama, renders obvious each asserted claim of the '675 patent. (*See* Appendix 2.)

Moreover, if Shin and Aoyama are interpreted as lacking any limitation of the asserted claims, it would have been obvious to add such a limitation to Shin and Aoyama in view of other secondary references. For example, if Shin and Aoyama are interpreted as not disclosing the "intention analyzing unit" and/or "notification-information acquiring unit" limitations, Kristjansson discloses those limitations and renders the claims obvious. It would have been obvious to a POSITA to modify Shin and/or Aoyama to include speech processing to provide an output including information acquired in response to using natural language understanding (NLU) to determine the user's intent, as taught by Kristjansson. Such a modification applies a known technique (Kristjansson's NLU processing to determine the user's intent) to a known device (Shin's device, as modified by Aoyama's teachings) to achieve predictable results (providing the user with desired content).

Additional details and motivations for this combination are set forth in IPR2025-00673, which are incorporated by reference herein.

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3. Shin in view of Iwase

Shin, in view of Iwase, renders obvious each asserted claim of the '675 patent. (*See* Appendix 2.)

Moreover, if Shin and Iwase are interpreted as lacking any limitation of the asserted claims, it would have been obvious to add such a limitation to Shin and Iwase in view of other secondary references. For example, if Shin and Iwase are interpreted as not disclosing the "intention analyzing unit" and/or "notification-information acquiring unit" limitations, Kristjansson discloses those limitations and renders the claims obvious. It would have been obvious to a POSITA to modify Shin and/or Iwase to include speech processing to provide an output including information acquired in response to using natural language understanding (NLU) to determine the user's intent, as taught by Kristjansson. Such a modification applies a known technique (Kristjansson's NLU processing to determine the user's intent) to a known device (Shin's device, as modified by Iwase's teachings) to achieve predictable results (providing the user with desired content).

Additional details and motivations for this combination are set forth in IPR2025-00673, which are incorporated by reference herein.

4. Shimomura in view of Aoyama

Japanese Unexamined Patent Application Publication No. 2005-202076 ("Shimomura"), in view of Aoyama, would have rendered obvious each asserted claim of the '675 patent. *See* Appendix 2. Shimomura and Aoyama disclose every limitation of the asserted claims. *Id*.

Moreover, if Shimomura and Aoyama are interpreted as lacking any limitation of the asserted claims, it would have been obvious to add such limitation to Shimomura and Aoyama in view of other secondary references. For example, if Shimomura and Aoyama are interpreted as not disclosing the "intention analyzing unit" and/or "notification-information acquiring unit" lim-

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itations, Kristjansson discloses those limitations and renders the claims obvious. Kristjansson discloses a "speech processing system" that is "capable of performing traditional speech processing" and "may execute certain commands, such as answering spoken utterances of the users." Kristjansson, 2:45-67. It would have been obvious to a POSITA to modify Shimomura and/or Aoyama to include speech processing to provide an output based on the user's intent, as taught by Kristjansson. Such a modification applies a known technique (Kristjansson's speech processing) to a known device (Shimomura and/or Aoyama's devices) to achieve predictable results (providing user with content).

Additional details and motivations for this combination are set forth in IPR2025-00673, which are incorporated by reference herein.

5. Shimomura in view of Iwase

Shimomura in view of Iwase would have rendered obvious each asserted claim of the '675 patent. *See* Appendix 2. Shimomura and Iwase disclose every limitation of the asserted claims. *Id*.

Moreover, if Shimomura and Iwase are interpreted as lacking any limitation of the asserted claims, it would have been obvious to add such limitation to Shimomura and Iwase in view of other secondary references. For example, if Shimomura and Iwase are interpreted as not disclosing the "intention analyzing unit" and/or "notification-information acquiring unit" limitations, Kristjansson discloses those limitations and renders the claims obvious. Kristjansson discloses a "speech processing system" that is "capable of performing traditional speech processing" and "may execute certain commands, such as answering spoken utterances of the users." Kristjansson, 2:45-67. It would have been obvious to a POSITA to modify Shimomura and/or Iwase to include speech processing to provide an output based on the user's intent, as taught by Kristjansson. Such

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a modification applies a known technique (Kristjansson's speech processing) to a known device (Shimomura and/or Iwase's devices) to achieve predictable results (providing user with content).

Additional details and motivations for this combination are set forth in IPR2025-00673, which are incorporated by reference herein.

6. Shin and/or Shimomura, in view of Iwase and Aoyama

Shin and/or Shimomura, in view of Iwase and Aoyama, would have rendered obvious each asserted claim of the '675 patent. (*See* Appendix 2.) It would have been obvious to a POSITA to modify Shin and/or Shimomura's devices in view of the references' teachings for at least the reasons discussed above.

Additional details and motivations for this combination are set forth in IPR2025-00673, which are incorporated by reference herein.

7. Shin, Shimomura, Aoyama, and/or Iwase in further view of Kristjansson

Shin, Shimomura, Aoyama, and/or Iwase, in further view of Kristjansson, render obvious each asserted claim of the '675 patent. (*See* Appendix 2.) It would have been obvious to a POSITA to modify known devices to include speech processing to provide an output including information acquired in response to using natural language understanding (NLU) to determine the user's intent, as taught by Kristjansson. Such a modification applies a known technique (Kristjansson's NLU processing to determine a user's intent) to a known device (such as those disclosed by Shin, Shimomura, Iwase, and Aoyama) to achieve predictable results (providing the user with desired content).

Additional details and motivations for this combination are set forth in IPR2025-00673, which are incorporated by reference herein.

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8. Amazon Echo Devices in view of Shin or Shimomura and Aoyama or Iwase

The Amazon Echo devices, in view of either Shin or Shimomura and either Aoyama or Iwase, render obvious each asserted claim of the '675 patent. (*See* Appendix 2.)

The Amazon Echo devices are prior art products capable of performing speech processing and providing spoken output to a user based on determining the user's intent and acquiring requested information. It would have been obvious to a POSITA to modify the Amazon Echo devices to include the distance calculation functionality of Shin or Shimomura and the word replacement feature of Aoyama or Iwase to provide an output with content determined based on the user-to-device distance, as disclosed by the prior art. Such a modification applies known techniques (user-to-device distance calculation, as in Shin and Shimomura, and word replacement, as in Aoyama and Iwase) to a known device (Amazon Echo devices) to achieve predictable results (Amazon Echo devices that tailor output content based on distance).

9. Google Home in view of Shin or Shimomura and Aoyama or Iwase

The Google Home device, in view of either Shin or Shimomura and either Aoyama or Iwase, would have rendered obvious each asserted claim of the '675 patent. (*See* Appendix 2.)

The Google Home device is a prior art product capable of performing speech processing and providing spoken output to a user based on determining the user's intent and acquiring requested information. It would have been obvious to a POSITA to modify the Google Home device to include the distance calculation functionality of Shin and/or Shimomura and the word replacement feature of Aoyama or Iwase to provide an output with content determined based on the user-to-device distance, as disclosed by the prior art. Such a modification applies known techniques

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(user-to-device distance calculation, as in Shin and Shimomura, and word replacement, as in Aoyama and Iwase) to a known device (Google Home device) to achieve predictable results (Google Home devices that tailor output content based on distance).

10. Apple HomePod in view of Shin or Shimomura and Aoyama or Iwase

The Apple HomePod device, in view of either Shin or Shimomura and either Aoyama or Iwase, would have rendered obvious each asserted claim of the '675 patent. *See* Appendix 2.

The Apple HomePod device is a prior art product capable of performing speech processing and providing spoken output to a user based on determining the user's intent and acquiring requested information. It would have been obvious to a POSITA to modify the Apple HomePod device to include the distance calculation functionality of Shin and/or Shimomura and the word replacement feature of Aoyama or Iwase to provide an output with content determined based on the user-to-device distance, as disclosed by the prior art. Such a modification applies known techniques (user-to-device distance calculation, as in Shin and Shimomura, and word replacement, as in Aoyama and Iwase) to a known device (Apple HomePod device,) to achieve predictable results (Apple HomePod devices that tailor output content based on distance).

11. Sonos One in view of Shin or Shimomura and Aoyama or Iwase

The Sonos One device, in view of either Shin or Shimomura and either Aoyama or Iwase, would have rendered obvious each asserted claim of the '675 patent. *See* Appendix 2.

The Sonos One device is a prior art product capable of performing speech processing and providing spoken output to a user based on determining the user's intent and acquiring requested information. It would have been obvious to a POSITA to modify the Sonos One device to include the distance calculation functionality of Shin and/or Shimomura and the word replacement feature of Aoyama or Iwase to provide an output with content determined based on the user-to-device distance, as disclosed by the prior art. Such a modification applies known techniques (user-to-

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device distance calculation, as in Shin and Shimomura, and word replacement, as in Aoyama and Iwase) to a known device (Sonos One device, Shin and/or Shimomura's devices) to achieve predictable results (Sonos One devices that tailor output content based on distance).

12. Sony Aibo in view of Shin or Shimomura and Aoyama or Iwase

The Sony Aibo device, in view of either Shin or Shimomura and either Aoyama or Iwase, would have rendered obvious each asserted claim of the '675 patent. *See* Appendix 2.

The Sony Aibo device is a prior art product capable of performing speech processing and providing output to a user based on determining the user's intent and acquiring requested information. It would have been obvious to a POSITA to modify the Sony Aibo device to include the distance calculation functionality of Shin and/or Shimomura and the word replacement feature of Aoyama or Iwase to provide an output with content determined based on the user-to-device distance, as disclosed by the prior art. Such a modification applies a known technique (speech processing) to a known device (Sony Aibo device, Shin and/or Shimomura's devices) to achieve predictable results (devices that tailor output content based on distance).

13. Amazon Echo Devices, Google Home Devices, Apple HomePod Device, Sonos One Device, Sony Aibo Device, Shin or Shimomura, and/or Aoyama or Iwase, in further view of Schuster

Each of the above-described devices, in view of Shin or Shimomura and Aoyama or Iwase and further in view of Schuster, renders obvious each asserted claim of the '675 patent. (*See* Appendix 2.) It would have been obvious to a POSITA to modify the devices in view of the references' teachings for at least the reasons discussed above.

14. Amazon Echo Devices, Google Home Devices, Apple HomePod Device, Sonos One Device, Sony Aibo Device, Shin, and/or Shimomura in further view of Kristjansson

Each of the above-described devices, in view of Shin or Shimomura and Aoyama or Iwase and further in view of Kristjansson, renders obvious each asserted claim of the '675 patent. (*See*

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Appendix 2.) It would have been obvious to a POSITA to modify the devices in view of the references' teachings for at least the reasons discussed above.

C. Invalidity Under 35 U.S.C. § 112

At least claims 2, 3, and 4 of the '675 patent are invalid as indefinite under 35 U.S.C. § 112. Claim 2 recites, in relevant part, "the output-content generating unit is further configured to select, on generating the first output sentence, at least one word to be placed with the other word based on a word included in the content information and the type information that is associated with the content information." A POSITA would not have understood, in light of the specification, the meaning of the above limitation, including what it means for "at least one word to be placed with the other word based on a word included in the content information and the type information." Thus, claim 2 is invalid as indefinite. Claims 3 and 4 depend from claim 2 and are therefore also invalid as indefinite.

D. Invalidity Under 35 U.S.C. § 101

The claims of the '675 patent are invalid for claiming ineligible subject matter under § 101. Amazon incorporates by reference as if set forth in full herein its Motion to Dismiss (Dkt. 32) and Reply thereto (Dkt. 38).

The claims of the '675 patent are directed to the abstract idea of collecting and analyzing information and presenting results. For example, the claims recite classifying a voice based on distance and tailoring output based on that classification. Such a claim is abstract. *See Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353-54 (Fed. Cir. 2016) ("analyzing information … by mathematical algorithms" is abstract).

The asserted claims are also abstract because they fail to specify *how* to achieve the results the claims recite. *See Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1342

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(Fed. Cir. 2017) ("[T]he claim language here provides only a result-oriented solution, with insufficient detail for how a computer accomplishes it. Our law demands more."). Such claims are directed to abstract ideas rather than technological solutions. *Ericsson Inc. v. TCL Commc'n Tech. Holdings Ltd.*, 955 F.3d 1317, 1328 (Fed. Cir. 2020) (holding claims abstract because they recited "functions in general terms, without limiting them to technical means for performing the functions"); *Interval Licensing*, 896 F.3d at 1343; *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (claims are abstract if they recite merely "generic functional language to achieve [the] purported solutions" without claiming "*how* the desired result is achieved"); *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1244 (Fed. Cir. 2016); *Elec. Power*, 830 F.3d at 1351.

Moreover, the asserted claims recite no inventive concept, because the recited steps are performed using entirely conventional electronic components, such as a conventional "proximity sensor." Indeed, the inventors believed that a proximity sensor was so conventional and well-understood that they did not provide any details about it in the specification. (*See* '675 patent at 10:32-38.) Such conventional components fail to supply an inventive concept. *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1170 (Fed. Cir. 2018) (functionality that is "not even asserted to be an invention of [the patentee]" cannot provide an inventive concept at *Alice* step two); *Hawk Tech. Sys., LLC v. Castle Retail, LLC*, 60 F.4th 1349, 1359 (Fed. Cir. 2023).

Accordingly, each asserted claim of the '675 patent is invalid under 35 U.S.C. § 101.

VI. SECONDARY CONSIDERATIONS OF OBVIOUSNESS OR NONOBVIOUSNESS

Discovery in this case is in its early stages. Amazon will amend or supplement these disclosures to respond to SoundClear's alleged secondary considerations of non-obviousness upon further development of SoundClear's allegations.

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To the extent that SoundClear contends that Amazon infringes, Amazon invented the subject matter of the asserted claims before the '337 and '675 patents' priority dates, which supports obviousness of the claims. SoundClear contends that Amazon products practice the claims of the Asserted Patents. (*See* SoundClear's Preliminary Infringement Contentions.) Many of these products were released prior to or near-simultaneously with the earliest priority date of the Asserted Patents. For example, the Amazon Echo Dot first generation was released in March 2016, and the Amazon Echo Dot second generation was released in October 2016. (*See supra* § II.A.14.) Thus, at least under SoundClear's interpretation of the claims, Amazon invented the claimed features of the Asserted Patents prior to or near-simultaneously with the purported inventor of the Asserted Patents.

VII. UNENFORCEABILITY

Amazon has not yet answered SoundClear's Second Amended Complaint. Amazon reserves the right to assert that the Asserted Patents are unenforceable due to inequitable conduct. Discovery in this case is in its early stages. Amazon will amend or supplement these disclosures as the parties take discovery.

The applicant of the '675 patent committed inequitable conduct by knowing of but failing to disclose material prior art to the USPTO with an intent to deceive the USPTO. The USPTO cited Shin in a December 10, 2020 office action during prosecution of the '337 patent application. Thus, at least by December 10, 2020, the applicant for the '337 and '675 patents became aware of Shin and its materiality to the Asserted Patents. The applicant continued to prosecute the '675 patent application through July 12, 2021, when it filed an IDS in the '675 patent application. During prosecution of the '675 patent, the applicant failed to inform the USPTO of Shin. The single most

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reasonable inference is that the ’675 patent applicant intended to deceive the USPTO by withholding Shin.

VIII. DOCUMENT PRODUCTION

Amazon is producing or making available for inspection, or has already produced or made available for inspection, copies of the prior art identified herein. Amazon reserves the right to identify and produce additional documents.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on March 12, 2025, a true and correct copy of the foregoing document has been served on the following counsel of record via electronic mail to:

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Executed on March 12, 2025, at Los Angeles, California.

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