THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
NORFOLK DIVISION

SOUNDCLEAR TECHNOLOGIES LLC,	§	
	§	
Plaintiff,	§	
	§	**Civil Action No. 2:24-cv-00321-EWH-DEM**
v.	§	
	§	
GOOGLE LLC,	§	
	§	
Defendant.	§	
	§	

MEMORANDUM OF LAW IN SUPPORT OF GOOGLE LLC'S
PARTIAL MOTION TO DISMISS PLAINTIFF'S COMPLAINT UNDER RULE 12(b)(6)

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I. INTRODUCTION

Google engineers spent years designing, developing, and refining Google Home and Google Nest devices that people use throughout the world to set reminders, turn on lights, play music, report on the weather, adjust the temperature, and so much more.

Plaintiff SoundClear is an entity formed solely to buy and assert patents. Seeking a return on its investment, SoundClear alleges that Google's Home and Nest devices infringe three patents that SoundClear purchased about a year ago.[1] But it is clear at even this early stage that at least one of the asserted patents, the '374 patent (asserted in Count II), is patent-ineligible under 35 U.S.C. § 101 for claiming an abstract idea. And it is equally clear that SoundClear's Complaint (Dkt. 1, "Compl.") fails plausibly to assert infringement of the '819 patent (asserted in Count III) under the *Iqbal/Twombly* standard.[2]

The '374 patent issued on June 30, 2015. Since then, courts consistently have held that claims like those found in the '374 patent violate Section 101 and are appropriately dismissed on the pleadings. Patent claims are subject to dismissal for violating Section 101 when they fail a two-step test: (1) the claims are directed to an abstract idea, and (2) the claims do not include an inventive concept that adds significantly more than the abstract idea to transform the nature of the claim. Courts have developed an extensive and well-established body of case law that guides the application of these steps.

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[1] U.S. Patent Nos. 9,031,259 (the "'259 patent"), 9,070,374 (the "'374 patent"), and 9,804,819 (the "'819 patent"), collectively, "the Asserted Patents."

[2] Though Google's independently developed products do not infringe any of the three patents, proof of non-infringement as to the '259 and '374 patents is not properly presented in this Rule 12 motion to dismiss.

The ’374 patent claims fail both steps. Under Step One, the Federal Circuit has repeatedly held that claims are directed to an abstract idea where they focus on merely collecting information, analyzing it, and indicating the results of that analysis. Here, the ’374 patent claims recite just that: collecting sound data, analyzing that data to detect speech and evaluate its quality, and indicating the results of that analysis–by turning on or off a light. The ’374 patent claims use only functional language to describe these generic goals, without reciting any concrete or specific limits on how the goals are accomplished. Under Step Two, the ’374 patent claims include no inventive concept because there is nothing in the claims beyond the abstract idea itself that could transform the nature of the claims. The patent specification reveals that the claimed components added to the abstract idea are nothing more than a microphone, a button, and an indicator light—all of which are undisputedly conventional. The claims of the ’374 patent are thus patent-ineligible under Section 101, and Count II must be dismissed.

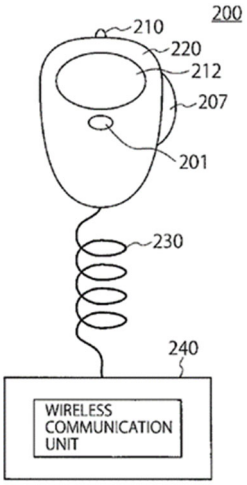
The Court should dismiss Count III because SoundClear cannot, and does not, plausibly plead direct infringement of the ’819 patent. The ’819 patent describes an audio-playing device having two states: a “non-locked state,” where a user can adjust volume, and a “locked state,” where “the volume level of the audio is fixed,” such that a user is prevented from adjusting volume. The accused Google Home and Google Nest devices do not operate in this manner. SoundClear’s Complaint includes no factual allegation that could plausibly suggest that the Google devices ever enter a “locked state” where “the volume level of the audio is fixed” and the user cannot adjust the volume. Thus, Count III fails to state a claim under the *Twombly/Iqbal* standard and must be dismissed.

Finally, for all Counts, SoundClear’s allegations of willful infringement are facially deficient as conclusory and must be dismissed under established precedent.

II. COUNT II: THE '374 PATENT CLAIMS ARE INELIGIBLE UNDER 35 U.S.C. § 101

Google moves to dismiss Count II under Rule 12(b)(6). SoundClear alleges infringement of at least claim 9 of the '374 patent. Compl. ¶ 59. Claim 9, which is representative of all claims of the '374 patent, falls squarely into a "familiar class of claims" that violate Section 101. *See Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016).

A. Brief Summary of the '374 Patent



The '374 patent describes a "communication apparatus," such as a walkie-talkie or two-way radio. '374 patent, Abstract. As shown in Figure 3 of the patent, reproduced here, the apparatus includes a microphone (201), a speaker (212), an LED indicator light (210), and a push-to-talk button (207), among other decades-old components. *Id*. at 6:3-7:9.

The '374 patent describes collecting sound data, analyzing that data to detect speech and evaluate its quality, and indicating the results of that analysis–by turning on or off a light. The patent does not claim to have invented a new way to collect data, analyze sound, or turn on a light. Nor does it claim any new or inventive equipment to do so, relying solely on admittedly well-known and conventional technology, such as microphones, transceivers, lights, and push-to-talk buttons.

The specification first provides background, explaining that before the alleged invention, it was "typical" for transceivers to be used in noisy environments, such as factories and construction sites, and that there was a demand for "clear voice sounds" in such noisy environments. '374 patent 1:22-28. To meet that demand, it was already "known" to use a main microphone for "mainly picking up" voice and a sub-microphone for "mainly picking up" surrounding noise, and using those together for an "active noise-cancellation function." '374 patent

1:29-32. The patent asserts, however, that such microphones may be poorly oriented resulting in "transmission of unclear voice sounds." '374 patent 1:43-51. The alleged invention purported to address this problem by flashing a "light-emitting device (LED)" to notify a user (likely the speaker) when "good speech quality" was picked up by the unit. '374 patent 5:6-19; 5:33-44. All of this is accomplished with existing, conventional hardware and existing, conventional signal processing techniques. Simply put: the idea of the invention was for a transceiver to provide a visible signal (a light) if detected speech quality was good, much like a friend might give you a head nod or a thumbs up signal indicating they can hear you speaking in a noisy room.

B. Legal Standard

> Section 101 of the Patent Act permits an inventor to obtain a patent on "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. This statutory language has long been understood to contain an important implicit exception … that abstract ideas are not patentable.

Dialect, LLC v. Amazon.com, Inc., No. 1:23-cv-581, 2023 U.S. Dist. LEXIS 201180, at *6-7 (E.D. Va. Nov. 8, 2023) (cleaned up). In *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, the Supreme Court established a two-part test for determining whether challenged patent claims violate § 101. 573 U.S. 208 (2014).

First, at *Alice* Step One, the Court determines whether the challenged claims are directed to an abstract idea. *See id.* at 218. To decide, the Court may "look at the 'focus of the claimed advance over the prior art' to determine if the claim's 'character as a whole' is directed to excluded subject matter." *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257–58 (Fed. Cir. 2016) (citations omitted).

Second, at *Alice* Step Two, if the challenged claims are directed to an abstract idea, the Court then "consider[s] the elements of each claim both individually and as an ordered

combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application." *Alice*, 573 U.S. at 217 (quotation omitted). The claims fail Step Two unless the claim limitations "involve more than performance of 'well-understood, routine, [and] conventional activities previously known to the industry.'" *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1347–48 (Fed. Cir. 2014) (quoting *Alice*, 573 U.S. at 225).

The Federal Circuit has "repeatedly recognized that in many cases it is possible and proper to determine patent eligibility under 35 U.S.C. § 101 on a Rule 12(b)(6) motion." *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1097 (Fed. Cir. 2016) (citations omitted). *See also PersonalWeb Techs. LLC v. Google LLC*, 8 F.4th 1310, 1314 (Fed. Cir. 2021) (§ 101 "may be, and frequently has been, resolved on a Rule 12(b)(6) or (c) motion where the undisputed facts, considered under the standards required by that Rule, require a holding of ineligibility under the substantive standards of law"). In other words, this Court can decide eligibility without expert testimony or claim construction. *See Yu v. Apple Inc.*, 1 F.4th 1040, 1046 (Fed. Cir. 2021) ("[P]atent eligibility can be determined at the Rule 12(b)(6) stage without the aid of expert testimony."); *Content Extraction*, 776 F.3d at 1349 ("Although the determination of patent eligibility requires a full understanding of the basic character of the claimed subject matter, claim construction is not an inviolable prerequisite to a validity determination under § 101.").

C. The Claims are Directed to the Abstract Idea of Gathering Sound Data, Analyzing that Data to Detect Speech and Evaluate its Quality, and Indicating the Results of that Analysis (*Alice* Step One).

To determine whether the challenged claims are directed to an abstract idea, the Court should first determine what the challenged claims are directed to. To do so, courts look to the claimed advance over the prior art, using the claim language itself as the focus of the analysis. *See*

Trinity Info Media, LLC v. Covalent, Inc., 72 F.4th 1355, 1363 (Fed. Cir. 2023) ("Our focus is on the claims, as informed by the specification."). In this case, both the specification and the claims themselves show that the challenged claims are directed to nothing more than the abstract idea of gathering sound data, analyzing that data to detect speech and evaluate its quality, and indicating the results of that analysis.[3]

The specification describes the problem in the prior art as the "transmission of unclear voice sounds." '374 patent 1:43-51. The specification describes addressing the problem by flashing a "light-emitting device (LED)" to notify a user (the speaker) of the quality of the speech picked up by the unit. *Id.* at 5:6-19. Annotated Figure 14 of the '374 patent illustrates the proposed solution: gather sound data (red box), analyze that data to detect speech and evaluate its quality (blue box), and indicate the results by turning an LED off or on and off (violet boxes).

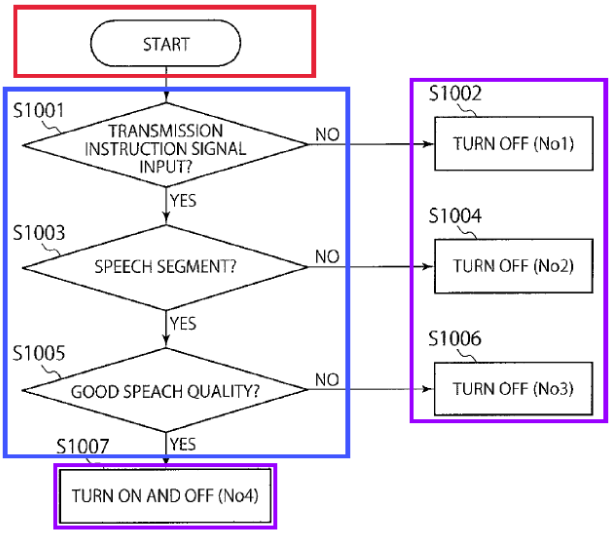


FIG. 14

The claims describe the same thing. SoundClear asserts claim 9 of the '374 patent, which is representative of all claims.[4] Compl. ¶ 59. Exhibit 1 is a demonstrative exhibit with the claim language color-coded showing that the claims are directed to gathering sound data (in red),

[3] The precise language used to describe the abstract idea of the claims is not dispositive. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016) (acknowledging that the abstract idea of the claims can be "described in other ways" without changing the conclusion that the claims are patent ineligible).

[4] The other claims of the '374 patent are directed to the same abstract idea as claim 9 as demonstrated in Exhibit 1, and none add any inventive concept.

analyzing that data to detect speech and evaluate its quality (in blue), and indicating the results of that analysis (in violet). Exhibit 1 also shows admittedly well-known and conventional components (in grey), which are addressed below at *Alice* Step Two. *See* II.D.

While, at first glance, the extensive verbiage of the claims may seem to suggest complexity, the actual meaning and requirements of the verbiage leaves little doubt that the claims require no more than gathering sound data, analyzing that data in a generalized way, and indicating the results of that analysis. This can be seen by using three color-coded buckets to group together the claim elements. For instance, the red portion of limitation 9[a] in Exhibit 1 recites the use of a "pick-up unit" to pick up sound (gathering sound data), which the specification admits was "known." '374 patent 1:29-32; 44:7.

The analysis of the gathered sound data, shown in blue in Exhibit 1, is claimed at a high level of generality in limitations 9[d], 9[g], and 9[h]. Limitation 9[d] generically requires determining a "pick-up state" of the gathered sound. The specification explains that "pick-up state" includes (1) whether the sound contains speech and (2) whether the speech quality is good. *See id.*, Fig. 13. Each of these aspects of the "pick-up state" is recited later in the claim. Specifically, limitation 9[h] functionally requires determining whether the speech signal to be transmitted "is a speech segment . . . ." Limitation 9[g] "evaluate[s] speech quality of the first speech signal to be transmitted . . . ." Missing from these elements, and from the claims as a whole, is any indication of *how* the apparatus determines whether speech is present, and how it evaluates the quality of such speech. Finally, limitation 9[f], shown in violet in Exhibit 1, recites indicating the results of the analysis of the gathered sound data. This limitation recites a "control unit" for controlling an LED by turning the light on, off, or on-and-off repeatedly, depending on the results of the analysis

of the gathered sound data. *See* '374 patent 19:47-20:23; *see also id.*, Fig. 13. The remaining limitations recite only conventional components as discussed in Section II.D below.

Looking past their verbosity, the challenged claims are thus directed to the mere idea of gathering sound data, analyzing that data to detect speech and evaluate its quality, and indicating the results of that analysis. This is an abstract idea under any and all of the three tests that courts typically use to determine whether the challenged claims are directed to an abstract idea (failing any one of these oft-used tests indicates that the claims are, in fact, directed to an abstract idea). First, the **case law comparison test** shows the claims are abstract because they are analogous to claims already found to be directed to an abstract idea. Second, the **functional test** shows claims are abstract because they are directed to generalized results instead of specific ways of accomplishing those results. Third, the **real-world analogy test** shows claims are abstract because they are essentially attempting to cover activities that humans performed before the claimed electronics existed.

1. The challenged claims fail the case law comparison test.

The Federal Circuit instructs that claims can fail step one of *Alice* by "compar[ing] claims at issue to those claims already found to be directed to an abstract idea in previous cases." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016); *In re Killian*, 45 F.4th 1373, 1383 (Fed. Cir. 2022) (the Federal Circuit has "decided cases arising under § 101 through comparison to its prior opinions") (citations omitted).

The claims of the '374 patent here are extremely similar to those dismissed in *Dialect*, 2023 U.S. Dist. LEXIS 201180, at *3-4. In *Dialect*, the patent at issue was "directed to a vehicle-mounted system of physical processors programmed to process natural speech." *Id*. at *3. The challenged claim recited a system for "processing natural language utterances" by "receiv[ing] a

natural language utterance associated with a user" (gathering sound data), "perform[ing] speech recognition" on that utterance, followed by parsing and interpreting the recognized speech and analyzing the query to determine if it is "to be executed on-board or off-board the vehicle" (analyzing that data to recognize and interpret speech), and based on the result, executing the query or sending it to the appropriate destination (indicating the results). *Id*. at *4-5. Like the '374 patent claims here, the challenged claim there did not "claim any specific hardware, software, or instrumentality" and instead recited "achieving a function using only prior art devices." *Id*. at *5. In *Dialect*, the court granted the defendant's motion to dismiss under Section 101. *Id*. at *15.

At *Alice* Step One, the *Dialect* court held that the claim was "plainly" results-oriented. *Id.* at *9. The court explained that gathering and analyzing voice data was abstract even though the challenged claim also recited using the analysis to determine which processor should execute the language and in fact executing the language:

> Ultimately, the process disclosed in [c]laim 1—understanding language using context, determining whether an on-or off-board processor is to handle that language, and then using that processor to execute the language—is no less abstract than "collection of information, comprehen[sion of its] meaning . . . , and indication of the results," an idea that the Federal Circuit has repeatedly found to fail *Alice* Step One.

Id. at *10 (citations omitted). The court rejected the plaintiff's arguments and concluded that the challenged claim failed *Alice* Step One. *Id*. The '374 patent claims here are analogous and, under the case law comparison test, should meet the same fate.

The claims of the '374 patent here are also similar to the claims dismissed in *Nuance Commc'ns, Inc. v. MModal LLC*, No. 17-1484-MN-SRF, 2018 U.S. Dist. LEXIS 210715 (D. Del. Dec. 14, 2018). In *Nuance*, one of the patents covered "automated speech recognition" and related generally "to methods and apparatus for categorizing input data in speech recognition systems and classifying the data into predetermined classifications." *Id*. at *3-4. The challenged claim recited

steps including "receiving an input data stream" (gathering sound data), "performing one of normalization, validation, and extraction of the input data stream" and "processing the input data stream to identify latent information . . . ." (analyzing that data to recognize latent information), and populating a report template based on the latent information (indicating the results). *Id*. at *4-5. The defendant moved to dismiss under Section 101, which the court granted. *Id*. at *27.

The court explained that the focus of the challenged claim was "directed to the abstract idea of receiving data, recognizing words using well-known [automated speech recognition] technology, and storing the data in the appropriate fields of a report template." *Id*. at *15 (citing *Elec. Power Grp.*, 830 F.3d at 1353-54). Similar to *Nuance*, the claims of the '374 patent are directed to collecting information, analyzing it, and presenting the results of that collection and analysis. That the collecting of information here is limited to sound data "does not change its character as information" and is still "within the realm of abstract ideas." *Nuance*, 2018 U.S. Dist. LEXIS 210715, at *16. And just as in *Nuance*, the Court should find that the '374 patent claims fail *Alice* Step One.

2. The challenged claims fail the functional test.

Under the functional test, courts consider "whether the claims in the patent focus on a specific means or method, or are instead directed to a result or effect that itself is the abstract idea and merely invokes generic processes and machinery." *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1337 (Fed. Cir. 2017). Here, the '374 patent claims fail the functional test because each claimed step is plainly results-oriented and fails to specify *how* to implement the step or achieve the desired result. *See Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1348 (Fed. Cir. 2015) (finding claim abstract because it "contain[ed] no restriction on how the result [wa]s accomplished"). The Federal Circuit has repeatedly held that

claims like these "focused on collecting and analyzing certain information and then reporting the results of that analysis are directed to an abstract idea." *In re Rosenberg*, 813 F. App'x 594, 596 (Fed. Cir. 2020) (citing *Elec. Power Grp.*, 830 F.3d at 1353). *See also Beteiro, LLC v. DraftKings Inc.*, 104 F.4th 1350, 1356 (Fed. Cir. 2024) (claims using "result-focused functional language, containing no specificity about how the purported invention achieves those results . . . are almost always found to be ineligible for patenting under Section 101").

As a stark example, limitation 9[g] recites a "speech-quality evaluation unit configured to evaluate speech quality of the first speech signal to be transmitted by the transmitter unit . . . ." But missing from the claims is any language specifying *how* to evaluate speech quality. Rather, the plaintiff claims only the *desired result*: the speech quality is evaluated as good or bad. This is not enough. *See Intell. Ventures I LLC v. Cap. One Fin. Corp.*, 850 F.3d 1332, 1342 (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.").

In fact, each of the claim limitations for gathering data, analyzing it, and indicating the outcome is functional and directed to a result or effect: 9[a] "pick up a voice sound," 9[b] "transmit the voice sound," 9[c] "switch a communication mode," 9[d] "determine a pick-up state of the voice sound," 9[e] "emit light," 9[f] "control the light-emitting device so that the light-emitting device is turned off, turned on or repeatedly turned on and off," 9[g] "evaluate speech quality," and 9[h] "determine whether or not the first speech signal to be transmitted by the transmitter unit is a speech segment." *See* Exhibit 1. None of these steps offer a particular, non-abstract way of performing the functions; they do not provide the "how."[5]

[5] In *Fitbit Inc. v. AliphCom*, No. 16-cv-00118-BLF, 2017 U.S. Dist. LEXIS 30721, at *28 (N.D. Cal. Mar. 2, 2017), the court explained that "merely presenting results is 'abstract as an ancillary

ENCO Sys., Inc. v. DaVincia, LLC, 845 F. App'x 953 (Fed. Cir. 2021) is also instructive. In *ENCO*, the challenged claim recited a "method for providing captioning in an AV signal" that recited a number of steps including "automatically identifying a voice and speech pattern in an audio signal from a plurality of voice and speech patterns with the speech-to-text processing system," training the speech-to-text system to learn new words in the audio signal, and translating the audio to caption data automatically with the speech-to-text system. *Id*. at 955. The Federal Circuit found the *ENCO* claims failed *Alice* Step One, explaining that the challenged claim failed to "set forth specific techniques for processing the data, instead reciting known computer techniques for automation of known processes." *Id*. at 957. Similar to *ENCO*, the '347 patent claims use only known computer techniques and known processes. And like *ENCO*, SoundClear fails to claim any specific techniques for evaluating gathered speech data.

Accordingly, the '374 patent claims fail the functional test because they do not "ha[ve] the specificity required to transform a claim from one claiming only a result to one claiming a way of achieving it." *Ericsson Inc. v. TCL Commc'n Tech. Holdings Ltd.*, 955 F.3d 1317, 1328 (Fed. Cir. 2020) (quotation omitted). Thus, the challenged claims are directed to an abstract idea and fail *Alice* Step One for this second reason.

3. The challenged claims fail the real-world analogy test.

The '374 patent claims fail *Alice* Step One for a third, independent reason: they are directed to an idea that has a clear "real-world" analog. Courts find claims that attempt to cover pre-existing human activity by adding merely conventional technology are abstract under *Alice* Step One. *See*

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part of such collection and analysis'" when holding that a challenged claim failed *Alice* Step One even though a "series of LED lights" "indicate[d] the total amount of movement." *Id.* at *3.

Alice, 573 U.S. at 223 ("Stating an abstract idea while adding the words 'apply it with a computer' simply combines those two steps, with the same deficient result."). For example, the Federal Circuit has held that a claims' similarity to "fundamental . . . practices long prevalent" is "yet another clue that the claims may be abstract and unpatentable." *Beteiro, LLC*, 104 F.4th at 1356 (citing *Intell. Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1314 (Fed. Cir. 2016) (claims directed to analyzing and characterizing email had an obvious pre-existing, real world analog—people sorting through their postal mail)). *See also Parus Holdings, Inc. v. Sallie Mae Bank*, 137 F. Supp. 3d 660, 671 (D. Del. 2015), *aff'd*, 677 F. App'x 682 (Fed. Cir. 2017) (holding claims involving speech recognition were abstract because there were "pre-Internet analogs" that suggested methods of organizing human (business) activity).

In this case, the '347 patent claims fail the real-world analogy test because they cover activity with a clear, non-technological analog. They can be described without technology as follows: when a colleague of Kristen's meets Kristen at a noisy bar, the colleague asks Kristen "can you hear me?," to which Kristen mentally "gathers" that sound data (she hears her colleague's voice), "analyzes" the sound data to determine if her colleague is speaking and if it is good speech quality (she determines whether she can sufficiently hear and understand her colleague to have a conversation), and "indicates" the results of that analysis (she gives her colleague a head nod or a thumbs-up if she can, in fact, hear the colleague well enough to understand the colleague's speech). The '374 patent claims cover this same activity, only using a conventional communication apparatus to gather and analyze the sound data (instead of ears and a human mind) and a well-known LED to indicate the results (instead of a head nod or thumbs-up). In short, the challenged claims do nothing more than specify the use of conventional technology to perform a common mental practice and basic human interaction that long predates microphones, signal processing,

and LEDs. *See Univ. of Fla. Rsch. Found., Inc. v. GE Co.*, 916 F.3d 1363, 1366 (Fed. Cir. 2019) (claims for collecting, analyzing, manipulating, and displaying data on a computer abstract where the same had been previously done manually).

D. There is No Inventive Concept in the Claim Elements Individually or as an Ordered Combination (*Alice* Step Two).

SoundClear fares no better at *Alice* Step Two. Step Two of the *Alice* Section 101 analysis requires a court to "consider the elements of [the] claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Dialect*, 2023 U.S. Dist. LEXIS 201180, at *8 (citing *Alice*, 573 U.S. at 217). "In other words, Step Two is a 'search for an inventive concept . . . sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible [abstract idea] itself.'" *Id*. (citing *Alice*, 573 U.S. at 217) (alterations in original). "The abstract idea itself cannot supply the inventive concept, 'no matter how groundbreaking the advance.'" *Caselas, LLC v. Verifone, Inc.*, No. 2023-1036, 2024 U.S. App. LEXIS 12676, at *3 (Fed. Cir. May 28, 2024) (citing *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1170 (Fed. Cir. 2018)).

There is no inventive concept here just as there was no inventive concept in *Dialect*. 2023 U.S. Dist. LEXIS 201180. At *Alice* Step Two, the court there found no inventive concept because "the abstract idea itself cannot provide the inventiveness *Alice* Step Two requires." *Id.* at *12. Given that, the court explained that the only portion of the challenged claim not directed to the abstract idea was determining whether the command/query was to be executed on-board or off-board the vehicle, and then executing it. *Id*. Still, the court held that determining where to execute the command and then executing did not satisfy *Alice* Step Two: "There is nothing inventive about this elementary concept; it constitutes a bare command to achieve a result." *Id*. at *12-15. Here, no claim limitations in the '374 patent recite anything beyond the use of the abstract idea of

gathering sound data, analyzing that data to detect speech and evaluate its quality, and indicating the results of that analysis. Thus, the claims of the ’374 patent are devoid of any inventive concept and likewise fail at *Alice* Step Two. And even if some limitations could be considered apart from the abstract idea itself, any remaining limitations do not recite *how* the steps are to be performed. For example, the speech-quality evaluation step only recites that “evaluating speech quality of the speech signal to be transmitted” is to occur, without reciting specifically *how*. ’374 patent, claim 9[g]. Again, there is no inventive concept at *Alice* Step Two. *See Nuance*, 2018 U.S. Dist. LEXIS 210715, at *25 (finding no inventive concept, explaining “the claims do not identify *how* the claimed functions of ‘bounding’ and ‘normalizing’ are performed”) (emphasis added).

To be sure, the ’374 patent claims do not incorporate anything beyond admittedly known, conventional components, such as microphones, transceivers, lights, and push-to-talk buttons. These components are recited in limitations 9[a], 9[b], 9[c], and 9[e], which are colored grey in Exhibit 1. The “pick-up unit” in limitation 9[a] is just a microphone, as the specification admits. ’374 patent at 4:1-6. The “communication-mode switching unit” in limitation 9[c] is just a push-to-talk button. *Id*.; *see also id*. at 4:63-67. The “light-emission device” in limitation 9[e] is just an LED indicator light. *Id*. at 5:9-17. These components, along with the “transmitter unit” in limitation 9[b], are all unquestionably conventional components of a walkie-talkie or two-way radio. *See* ’374 patent 1:22-28 (admitting that audio input apparatuses and transceivers were “typical” and “often used” in places like factories and construction sites). Thus, the claims do not incorporate anything beyond admittedly known components. As a matter of law, such components fail to supply an inventive concept. *See Hawk Tech. Sys., LLC v. Castle Retail, LLC*, 60 F.4th 1349, 1359 (Fed. Cir. 2023) (“[M]erely reciting an abstract idea performed on a set of generic computer components . . . would not contain an inventive concept.”); *compare, e.g.*, ’374 Patent, Claim 9[f]

("a control unit configured to control the light-emitting device") *with Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021) (no inventive concept where only well-known and conventional components, such as a digital image processor, were recited to perform only their basic functions and are set forth at a high level of generality).

Nor is there any inventive concept in the claim limitations as an ordered combination. In *Two-Way Media*, 874 F.3d at 1333, the patents generally related to "streaming audio/visual data over a communications system like the internet." At *Alice* Step Two, the court explained that while an inventive concept could be found in the "non-conventional and non-generic arrangement of known, conventional pieces[,]" there was "no inventive concept in the ordered combination of these limitations." *Two-Way Media*, 874 F.3d at 1339 (citation omitted). The court explained: "The claim uses a conventional ordering of steps—first processing the data, then routing it, controlling it, and monitoring its reception—with conventional technology to achieve its desired result." *Id*.

Here, similar to *Two-Way Media*, there is no inventive concept where the sound data must be picked up in order to be analyzed, and analyzed in order for the results of that analysis to be displayed to a user. *See, e.g.*, '374 patent, claim 9[d] (". . . determine a pick-up state of the voice sound picked up by the first pick-up unit"). Furthermore, the claims use conventional technology, such as microphones, transceivers, lights, and push-to-talk buttons, to achieve the desired results. *See also Prism Techs. LLC v. T-Mobile USA, Inc.*, 696 F. App'x 1014, 1018 (Fed. Cir. 2017) ("Viewed as an ordered combination, the asserted claims recite no more than the sort of 'perfectly conventional' generic computer components employed in a customary manner that we have previously held insufficient to transform the abstract idea into a patent-eligible invention.").

* * *

The results-oriented claims of the '374 patent recite generic components implementing an abstract idea with no inventive concept. The claims are patent ineligible under Section 101. Count II should be dismissed with prejudice.[6]

III. COUNT III: SOUNDCLEAR FAILS TO STATE A PLAUSIBLE CLAIM FOR DIRECT INFRINGEMENT OF THE '819 PATENT

Count III does not include factual allegations that can plausibly support direct infringement of the '819 patent.[7] SoundClear alleges that the Google Products infringe claim 8 because they are in a "locked state" when the user is able to control the volume (which is the opposite of what the claims say), and in an "non-locked" state when the volume is adjusted without user control (which is again the opposite of what the claims say). Even setting aside that obvious incompatibility between the claimed states and the Google Products, the factual allegations make clear that the volume of the Google Products is never fixed and unable to be adjusted by the user as required by asserted claim 8. *Twombly/Iqbal* thus requires dismissal of Count III.

A. The '819 Patent's Volume Control Functionality

The '819 patent describes a device that is capable of playing audio. The two independent claims of the '819 patent (Claims 1 and 8) each recite a "locked" and a "non-locked" volume state for the audio device. '819 patent, 10:53-11:8, 12:20-41. The locked state must: (1) fix the volume level at a particular level; and (2) prevent subsequent user adjustment of the volume level. For example, asserted claim 8 recites a "locked state in which *the volume level of the audio is fixed* by

[6] Although the patent ineligibility argument in this Motion is limited to the claims of the '374 Patent, Google does not concede that the claims of the '259 and '819 patents are patent eligible under 35 U.S.C. § 101.

[7] SoundClear accuses the following devices and related apps and features of infringing claim 8 of the '819 patent: Google Home, Google Nest Mini (1st Gen), Google Home Mini (1st Gen), Google Home Max, Google Nest Audio, Google Nest Hub, Google Nest Hub Max, and Google Nest Hub (2nd Gen.), and Google Assistant (collectively, "Google Products"). *See* Compl. ¶ 8.

a *constant* lock value for the operating value." *Id.* 12:20-29 (emphasis added). Thus, the volume level in the claimed locked state is set to a specific level ("fixed") and remains at that level ("constant"). The specification describes the locked state in exactly the same way: "the volume level of audio is fixed at a constant level" (*id*., 5:25-26).[8]

In the locked state, the volume level is set at a value by the user. In particular, the claims recite an "operating value." The operating value is the volume at which sound is played by the device, which in turn, is set by the user: "a volume operating unit configured to output an operating value indicating a volume level of the audio according to a user operation." ('891 Patent, 10:50-52 (claim 1), 12:17-19 (claim 8)). In a locked state, the volume is set at a "constant lock value," which can be updated by the user using the "operating value." *See id.* at 10:50-11:8, 12:17-41 ("output an operating value indicating a volume level of the audio according to a user operation", "updating the lock value with the operating value and switching the non-locked state to the locked state"). The specification further confirms that user operation, *e.g.*, by use of a volume key, sets the operating value, which sets the lock value:

> The volume key 36 is a part that can be *operated by the user* to vary a volume level of audio output during receiving the electromagnetic waves. The volume key 36 is a mechanical operating part disposed in the cabinet. The volume key 36 may, for example, be a rotary variable resistor in which the position of a rotary shaft represents the volume level.
>
> *****
>
> The volume operating unit 72 outputs an operating value that indicates the volume level of audio in accordance with the operation performed by the user. For example, the volume operating unit 72 is achieved by the volume key 36 and the main control circuit 30. When the volume key 36 is a rotary variable resistor having three

[8] The independent claims also describe a "non-locked state" where the "volume level of the audio can be varied based on the operating value." *Id.* 12:20-29.

> terminals, for example, a predetermined voltage is applied across a resistor in the volume key 36.
>
> *****
>
> Specifically, when the non-locked state is switched to the locked state in accordance with the operation performed by the user, *the lock controller 74 registers the operating value of the volume operating unit 72 at the switching operation as the lock value*.

'819 patent, 3:49-54, 5:7-14, 5:46-50 (emphasis added).[9] Thus, the user provides the operating value that sets the volume level in the locked state.

B. The Alleged Operation of the Google Products Volume Control Functionality

SoundClear accuses Google's audio-playing Home and Nest devices and Google's screen-based Hub products of infringing claim 8 of the '819 Patent. Compl. ¶¶ 79-91. The Google Products play audio, such as voice and music, at a volume selected by the user, based on the user's voice prompts or push button operation. Compl. ¶¶ 83-85.[10]

The Google Products also allegedly include an Ambient IQ mode that "lets Nest Audio also adjust the volume of Assistant, news, podcasts and audiobooks based on the background noise in your home, so you can hear the weather forecast over a noisy dishwasher." Compl. ¶ 85. In other words, SoundClear alleges that when the Ambient IQ mode is active, it overrides the user-set volume level and automatically varies the volume level of what is playing on the device. Accordingly, SoundClear alleges that Ambient IQ will automatically vary the volume level depending on the noise in the room.

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[9] The claims provide that in a "non-locked" state, the volume level is determined based on the operating value that is set by the user. ('891 Patent, 10:50-52 (claim 1), 12:17-19 (claim 8)); *see also id.* at 10:59-60, 12:21-22 ("the audio having a volume level corresponding to the operating value in a non-locked state").

[10] For the purposes of this motion only, Google accepts as true SoundClear's factual allegations relating to the functionality of the Google Products.

SoundClear further alleges that the Google Products provide a feature called Media EQ. According to SoundClear, Media EQ "enables Nest Audio to automatically tune itself to whatever you're listening to: music, podcasts, audiobooks or even a response from Google Assistant." *See* Compl. ¶ 85 (citing https://blog.google/products/google-nest/new-nest-audio/). Here, according to SoundClear's allegations, the accused feature relates to tuning the audio (adjusting the sound characteristics like bass and treble), not the volume level set by the user.

SoundClear alleges that the Google Products are in a "locked" state when a user can manually adjust the volume. Compl. ¶¶ 84, 85. SoundClear further alleges that the Google Products are in a "non-locked" state when Ambient IQ is varying the volume or Media EQ is tuning the audio. *Id.* Even accepting the counterintuitive facts as alleged, the Google devices do not have a locked state where the volume is both set by the user and constant, making SoundClear's allegations subject to dismissal on the pleadings.

C. Legal Standard

"To survive a motion to dismiss [under Rule 12(b)(6)], a complaint must contain sufficient factual matter, accepted as true, to 'state a claim to relief that is plausible on its face.'" *Walton Glob. Invs., Ltd. v. Bowman Consulting Grp., Ltd.*, No. 3:23-cv-87, 2023 WL 4138243, at *2 (E.D. Va. June 22, 2023) (alteration in original) (quoting *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009)). The Federal Circuit has recognized that "a plaintiff may find it has pleaded itself out of court" where a complaint's allegations are "inconsistent with and contradict infringement." *Bot M8 LLC v. Sony Corp. of Am.*, 4 F.4th 1342, 1354 (Fed. Cir. 2021). A "plaintiff cannot assert a plausible claim for infringement under the *Iqbal/Twombly* standard by reciting the claim elements and merely concluding that the accused product has those elements. There must be some factual allegations that, when taken as true, articulate why it is plausible that the accused product infringes

the patent claim." *Bot M8*, 4 F.4th at 1353; *see also Ottah v. Bracewell LLP*, No. 22-1876, 2022 WL 16754378, at *2 (Fed. Cir. Nov. 8, 2022) (affirming a district court's grant of a motion to dismiss because, even accepting the plaintiff's factual allegations as true, the accused products did not practice certain claim limitations of the asserted patent); *Kim v. Green Tea Ideas*, No. 3:17-cv-00449-JAG, 2018 WL 1172998, at *2 (E.D. Va. Mar. 6, 2018) ("Literal infringement requires the accused product to contain each exact claim limitation.").

D. Count III of the Complaint Must Be Dismissed Because It Fails To Plausibly Allege That the Google Products Include "Locked" and "Non-Locked" States

Count III does not allege a plausible theory whereby the Google Products infringe the claims of the '819 patent. SoundClear has pleaded itself out of infringement by unambiguously alleging that the user-volume-level-setting operation and Ambient IQ/Media EQ modes operate in a way that is plainly contrary to the claimed locked and non-locked states required by the '819 patent claims.

First, SoundClear's allegations show that there can be no "locked" state of the Google Products because volume is never actually "fixed" at a constant value. Confusingly (and counter-intuitively), SoundClear alleges that a user's ability to manually vary volume higher or lower, either through voice commands or prompts, or button operation, somehow constitutes "locked state" operation. Compl. ¶¶ 83, 84. This is implausible because permitted user volume adjustment necessarily is not "fixed by a constant lock value." The independent claims of the '819 patent (claims 1 and 8) explicitly require that in the locked state, "the volume level of the audio is fixed." '819 Patent, 10:55-56, 12:26-27. SoundClear's allegations thus fail on their face.

Second, SoundClear's allegations show that there cannot be a "locked" state because the Google Products do not have a "constant" lock value. Claims 1 and 8 require that the volume level is fixed "by a *constant lock value* for the operating value." *Id.* at 10:56-57, 12:27-28. According

to the Complaint, there is nothing that prevents a user from changing the volume level, so there cannot be a "locked" state. Once again, SoundClear's allegations fail *ab initio*.

Third, any attempt by SoundClear to amend the Complaint to modify its allegations of locked state operation would be futile. SoundClear's allegations make clear that the basic operation of the accused products makes it implausible (if not impossible) for them to operate in a "locked" state because the products do not (a) fix volume at a constant level and/or (b) prevent a user from adjusting the volume level.[11] For example, Ambient IQ and Media EQ operation could not be alleged to constitute the claimed "locked" state because Ambient IQ and Media EQ do not keep the volume level at a fixed and constant value. Indeed, holding the volume level at a fixed value would be contrary to the point of those accused modes, which is to vary the volume and sound levels according to the noise in the room. Moreover, Ambient IQ and Media EQ do not rely on the user setting their volume level at all and would separately fail to meet the claims' requirement for "updating the lock value with" a user-set "operating value."

Further, SoundClear identifies the operation of Ambient IQ and Media EQ as constituting the alleged "non-locked state" required by the '819 patent claims (Complaint ¶ 84), but the Complaint acknowledges that Ambient IQ and Media EQ operate *without user control* ("otherwise not independently adjusting the volume level set by the user"). *Id.*[12] Thus, Ambient IQ and Media

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[11] The independent claims make clear that the claimed non-locked state is one in which the volume level of the audio can be varied *by the user*. The claims say that an operating value is set and controlled by the user in the non-locked state: *e.g.*, "an *operating value* indicating a volume level of the audio *according to a user operation . . . non-locked state* in which *the volume level of the audio can be varied based on the operating value.*" '819 Patent, 12:17-24 (emphases added).

[12] And see Compl. ¶ 85: "one or more of the Google Home Products permit the volume of Google Assistant's spoken responses to automatically deviate from the volume level that was set by the user. These modes include the Ambient IQ mode. In the Ambient IQ mode, Google Assistant's spoken responses are provided at the volume level generally higher than the set value so that the responses may be heard over loud ambient noise in the room. This mode corresponds to a 'non-

EQ cannot be a "non-locked" state, as they do not involve or permit "a user operation" to set the operating volume value. '819 Patent, 12:17-24 ("an *operating value* indicating a volume level of the audio *according to a user operation*. . . *non-locked state* in which *the volume level of the audio can be varied based on the operating value.*") (emphases added).

In sum, common sense demonstrates the fallacy of SoundClear's theory of locked and non-locked states being found in the Google Products. "Determining whether a complaint states a plausible claim for relief [is] a context-specific task that requires the reviewing court to draw on its judicial experience and common sense." *Bot M8*, 4 F.4th at 1352 (citing *Iqbal*, 556 U.S. at 679). Here, it is without question that the Google Products have no locked state - the volume level set by a user can subsequently be changed at any time either by the user or by Ambient IQ or Media IQ. Since the Google Products cannot be fixed into an unchangeable constant volume level state, they have no locked and non-locked states. Where, as here, limitations required in all claims of the asserted patent are clearly absent based on SoundClear's own allegations, dismissal is warranted. SoundClear's infringement theory is implausible and amendment would be futile. Count III should be dismissed with prejudice under the *Iqbal/Twombly* standard.

IV. SOUNDCLEAR FAILS TO STATE A PLAUSIBLE CLAIM FOR WILLFUL INFRINGEMENT

In the Prayer for Relief of its Complaint, SoundClear seeks "enhanced damages for willful infringement." Compl. Prayer for Relief, d. The Court should dismiss SoundClear's claim for willful infringement as inadequately pled under *Iqbal/Twombly*. To state a claim that Google willfully infringed the Asserted Patents, SoundClear was required to allege facts showing (1)

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locked' state because the volume is allowed to automatically deviate from the volume level set by the user."

Google knew about the Asserted Patents and (2) then engaged in "deliberate or intentional infringement." *Bayer Healthcare LLC v. Baxalta Inc.*, 989 F.3d 964, 988 (Fed. Cir. 2021); *State Indus., Inc. v. A.O. Smith Corp.*, 751 F.2d 1226, 1236 (Fed. Cir. 1985); *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1341 (Fed. Cir. 2016) ("Knowledge of the patent alleged to be willfully infringed continues to be a prerequisite to enhanced damages."); *see also Bushnell Hawthorne, LLC v. Cisco Sys., Inc.*, No. 1:18-cv-760, 2019 WL 8107921, at *1 (E.D. Va. Feb. 26, 2019) (dismissing claim where patentee failed to "allege facts to demonstrate the defendant's behavior was egregious under the circumstances, such as facts showing that defendant was subjectively aware of the risk that its conduct constituted infringement.").

SoundClear's Complaint satisfies neither requirement: the Complaint does not allege any factual basis to support that (1) Google had knowledge of any of the Asserted Patents and alleges no facts from which the Court could infer that (2) Google engaged in "deliberate or intentional infringement" of any of the Asserted Patents. *Bayer*, 989 F.3d at 998. Thus, SoundClear's naked demand for damages based on willful infringement must be dismissed.

V. CONCLUSION

For the foregoing reasons, the Court should dismiss with prejudice Count II, Count III, and SoundClear's willful infringement claims, pursuant to Rule 12(b)(6).[13]

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[13] Google hereby advises the Court of other litigations related to this case filed by plaintiff, involving the same or related patents or products. Plaintiff filed *SoundClear v. Amazon* (Civ. No. 2:24-cv-00320) against Amazon.com, Inc., Amazon.com LLC, and Amazon Web Services, Inc. ("Amazon") in the Alexandria Division on the same day (May 1, 2024) as the present litigation. That case was assigned to Judge Arenda L. Wright Allen in the Norfolk Division on May 2, 2024. In that suit against Amazon, SoundClear asserts the same three patents (the Asserted Patents) that it asserts against Google in the present litigation. SoundClear alleges that Amazon's audio playing devices, such as the Amazon Echo and Fire TV Cube, as well as Amazon Alexa, infringe the asserted patents. *SoundClear Techs. LLC v. Amazon.Com, Inc.*, No. 2:24-cv-00320-AWA-LRL, ECF No. 1 ¶ 15. Plaintiff also filed *SoundClear v. Google* (Civ. No. 3:24-cv-00540) on July 25, 2024, in the Alexandria Division against Google. That case was assigned to Judge M. Hannah

Dated: August 5, 2024

Respectfully submitted,

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Lauck in the Richmond Division on July 26, 2024. SoundClear alleges that Google infringes three different patents—U.S. Patent Nos. 11,069,337, 11,244,675, and 9,223,487. Among the products that SoundClear accuses of infringement include those allegedly infringed in the present suit (Google Home, Nest and Hub audio playing devices). *SoundClear Techs. LLC v. Google, LLC*, No. 3:24-cv-00540-MHL, ECF No. 1 ¶ 8.

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CERTIFICATE OF SERVICE

I hereby certify that on August 5, 2024, I will electronically file the foregoing with the Clerk of Court using the CM/ECF system, which will send a notification of such filing (NEF) to the following:

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Exhibit 1

Exhibit 1

'374 Patent, Claim 9
9[pre]. A communication apparatus comprising: [a] a first pick-up unit configured to pick up a voice sound; [b] a transmitter unit configured to transmit the voice sound picked up by the first pick-up unit to outside as a first speech signal; [c] a communication-mode switching unit configured to switch a communication mode between a standby mode in which the transmitter unit does not transmit the speech signal and a transmission mode in which the transmitter unit transmits the speech signal; [d] a sound pick-up state determination unit configured to determine a pick-up state of the voice sound picked up by the first pick-up unit; [e] a light emission device configured to emit light; [f] a **control unit** configured to **control the light-emitting device** so that the light-emitting device is turned off, turned on or repeatedly turned on and off based on the communication mode switched by the communication-mode switching unit, and the pick-up state of the voice sound picked up by the first pick-up unit and determined by the sound pick-up state determination unit; [g] a **speech-quality evaluation unit** configured to **evaluate speech quality of the first speech signal** to be transmitted by the transmitter unit, wherein the sound pick-up state determination unit determines the sound pick-up state of the voice sound picked up by the first sound pick-up unit based on the speech quality of the speech signal evaluated by the speech-quality evaluation unit; and [h] a **speech-segment determination unit** configured to **determine whether or not the first speech signal to be transmitted by the transmitter unit is a speech segment**, wherein, the sound pick-up state determination unit determines the sound pick-up state of the sound to be transmitted as the first speech signal based on a determination result at the speech-segment determination unit and an evaluation result at the speech-quality evaluation unit.

Legend
Red = gathering sound data Blue = analyzing that data to determine if it is good speech quality Violet = indicating the results of that analysis Grey = admittedly known and conventional components

’374 Patent, Claim 9	’374 Patent, Claim 1
9[pre]. A communication apparatus comprising: [a] a first pick-up unit configured to pick up a voice sound; [b] a transmitter unit configured to transmit the voice sound picked up by the first pick-up unit to outside as a first speech signal; [c] a communication-mode switching unit configured to switch a communication mode between a standby mode in which the transmitter unit does not transmit the speech signal and a transmission mode in which the transmitter unit transmits the speech signal; [d] a sound pick-up state determination unit configured to determine a pick-up state of the voice sound picked up by the first pick-up unit; [e] a light emission device configured to emit light; [f] a control unit configured to control the light-emitting device so that the light-emitting device is turned off, turned on or repeatedly turned on and off based on the communication mode switched by the communication-mode switching unit, and the pick-up state of the voice sound picked up by the first pick-up unit and determined by the sound pick-up state determination unit; [g] a speech-quality evaluation unit configured to evaluate speech quality of the first speech signal to be transmitted by the transmitter unit, wherein the sound pick-up state determination unit determines the sound pick-up state of the voice sound picked up by the first sound pick-up unit based on the speech quality of the speech signal evaluated by the speech-quality evaluation unit; and [h] a speech-segment determination unit configured to determine whether or not the first speech signal to be transmitted by the	1[pre]. A condition notification method for notifying a used condition of a simplex communication apparatus by using a light-emitting device attached to the simplex communication apparatus, the method comprising: [a] a communication-mode determination step of determining whether a communication mode of the simplex communication apparatus is a transmission mode or a standby mode; [b] a sound pick-up state determination step of determining a sound pick-up state of a sound carried by a speech signal to be transmitted if the communication mode is the transmission mode; [c] a control step of controlling the light-emitting device so that the light-emitting device is turned off, turned on or repeatedly turned on and off based on determination results of the communication-mode determination step and the sound pick-up state determination step; [d] a speech-quality evaluation step of evaluating speech quality of the speech signal to be transmitted, wherein, in the sound pick-up state determination step, the sound pick-up state of the sound carried by the speech signal to be transmitted is determined if the communication mode is the transmission mode based on the speech quality of the speech signal evaluated by the speech-quality evaluation step; and [e] a speech-segment determination step of determining whether or not the speech signal to be transmitted is a speech segment if the communication mode is the transmission mode, wherein, in the sound pick-up state determination step, the sound pick-up state of the sound carried by the speech signal to be transmitted, if the communication mode is the transmission mode, is determined based on a

transmitter unit is a speech segment, wherein, the sound pick-up state determination unit determines the sound pick-up state of the sound to be transmitted as the first speech signal based on a determination result at the speech-segment determination unit and an evaluation result at the speech-quality evaluation unit.	determination result of the speech-segment determination step and an evaluation result of the speech-quality evaluation step.

’374 Patent, Claim 9	’374 Patent, Claims 2-8
9[pre]. A communication apparatus comprising: [a] a first pick-up unit configured to pick up a voice sound; [b] a transmitter unit configured to transmit the voice sound picked up by the first pick-up unit to outside as a first speech signal; [c] a communication-mode switching unit configured to switch a communication mode between a standby mode in which the transmitter unit does not transmit the speech signal and a transmission mode in which the transmitter unit transmits the speech signal; [d] a sound pick-up state determination unit configured to determine a pick-up state of the voice sound picked up by the first pick-up unit; [e] a light emission device configured to emit light; [f] a control unit configured to control the light-emitting device so that the light-emitting device is turned off, turned on or repeatedly turned on and off based on the communication mode switched by the communication-mode switching unit, and the pick-up state of the voice sound picked up by the first pick-up unit and determined by the sound pick-up state determination unit; [g] a speech-quality evaluation unit configured to evaluate speech quality of the first	2. The condition notification method according to claim 1, wherein, in the control step, the light-emitting device is turned on if the communication mode is the transmission mode whereas the light-emitting device is repeatedly turned on and off based on the sound pick-up state determined in the sound pick-up state determination step if the communication mode is the transmission mode. 3. The condition notification method according to claim 1, wherein, in the speech-quality evaluation step, the speech quality of the speech signal to be transmitted is evaluated based on a volume level of a sound to be picked up. 4. The condition notification method according to claim 1 further comprising a noise cancellation step of performing noise cancellation to a first speech signal input from a first sound pick-up unit by using a second speech signal input from a second sound pick-up unit, the first and second sound pick-up units being provided for the simplex communication apparatus, wherein, speech quality of a speech signal after the noise cancellation is evaluated in the speech-quality evaluation step. 5. The condition notification method according to claim 1, wherein in the speech-segment determination step it is determined whether or not the speech signal to be transmitted is

speech signal to be transmitted by the transmitter unit, wherein the sound pick-up state determination unit determines the sound pick-up state of the voice sound picked up by the first sound pick-up unit based on the speech quality of the speech signal evaluated by the speech-quality evaluation unit; and [h] a speech-segment determination unit configured to determine whether or not the first speech signal to be transmitted by the transmitter unit is a speech segment, wherein, the sound pick-up state determination unit determines the sound pick-up state of the sound to be transmitted as the first speech signal based on a determination result at the speech-segment determination unit and an evaluation result at the speech-quality evaluation unit.	a speech segment if the communication mode is the transmission mode, wherein, in the speech-quality evaluation step, the speech quality of the speech signal to be transmitted is evaluated while the speech signal to be transmitted is being determined as the speech segment. 6. The condition notification method according to claim 1 further comprising a microphone-direction determination step of determining a direction of a main microphone based on a phase difference of sounds picked up by a first sound pick-up unit and a second sound pick-up unit both provided for the simplex communication apparatus, the first sound pick-up unit including the main microphone, wherein, in the speech-quality evaluation step, the speech quality of the speech signal to be transmitted is evaluated based on the direction of the main microphone thus determined in the microphone-direction determination step. 7. The condition notification method according to claim 4, wherein, in the control step, the light-emitting device is turned off if the communication mode is the standby mode, the light-emitting device is turned on if the communication mode is the transmission mode and if the speech signal to be transmitted is not the speech segment, the light-emitting device is turned on if the communication mode is the transmission mode and if the speech signal to be transmitted is the speech segment, and if the speech quality of the speech signal to be transmitted is evaluated as bad, and the light-emitting device is repeatedly turned on and off if the communication mode is the transmission mode and if the speech signal to be transmitted is the speech segment, and if the speech quality of the speech signal to be transmitted is evaluated as good. 8[pre]. The condition notification method

	according to claim 1, wherein the speech-segment determination step includes: [a] a frequency conversion step of converting a signal input from a sound pick-up unit provided for the simplex communication apparatus into a signal component in unit of a specific length in a frequency domain; and [b] a sound determination step of determining whether the signal input from the sound pick-up unit carries a voice component or a noise component based on a spectrum component of the signal component thus converted into the frequency domain.

’374 Patent, Claim 9	’374 Patent, Claims 10-15
9[pre]. A communication apparatus comprising: [a] a first pick-up unit configured to pick up a voice sound; [b] a transmitter unit configured to transmit the voice sound picked up by the first pick-up unit to outside as a first speech signal; [c] a communication-mode switching unit configured to switch a communication mode between a standby mode in which the transmitter unit does not transmit the speech signal and a transmission mode in which the transmitter unit transmits the speech signal; [d] a sound pick-up state determination unit configured to determine a pick-up state of the voice sound picked up by the first pick-up unit; [e] a light emission device configured to emit light; [f] a control unit configured to control the light-emitting device so that the light-emitting device is turned off, turned on or repeatedly turned on and off based on the communication mode switched by the communication-mode switching unit, and	10. The communication apparatus according to claim 9, wherein the light-emitting device is turned on if the communication mode is switched into the transmission mode whereas the light-emitting device is repeatedly turned on and off based on the pick-up state determined by the sound pick-up state determination unit if the communication mode is switched into the transmission mode. 11[pre]. The communication apparatus according to claim 9 further comprising: [a] a second sound pick-up unit configured to pick up a voice sound; [b] a noise cancellation unit configured to perform noise cancellation to the first speech signal input from the first sound pick-up unit by using a second speech signal input from the second sound pick-up unit, [c] wherein the transmitter unit transmits a speech signal after the noise cancellation by the noise cancellation unit and the speech-quality evaluation unit evaluates speech quality of the speech signal after the noise cancellation.

the pick-up state of the voice sound picked up by the first pick-up unit and determined by the sound pick-up state determination unit; [g] a speech-quality evaluation unit configured to evaluate speech quality of the first speech signal to be transmitted by the transmitter unit, wherein the sound pick-up state determination unit determines the sound pick-up state of the voice sound picked up by the first sound pick-up unit based on the speech quality of the speech signal evaluated by the speech-quality evaluation unit; and [h] a speech-segment determination unit configured to determine whether or not the first speech signal to be transmitted by the transmitter unit is a speech segment, wherein, the sound pick-up state determination unit determines the sound pick-up state of the sound to be transmitted as the first speech signal based on a determination result at the speech-segment determination unit and an evaluation result at the speech-quality evaluation unit.	12. The communication apparatus according to claim 11 further comprising a microphone-direction determination unit configured to determine a direction of a main microphone based on a phase difference of the voice sounds picked up the first and second sound pick-up units, respectively, the first sound pick-up unit including the main microphone, wherein, the speech-quality evaluation unit evaluates the speech quality of the speech signal to be transmitted by the transmitter unit based on the direction of the main microphone thus determined by the microphone-direction determination unit. 13. The communication apparatus according to claim 9, wherein the control unit controls the light-emitting device so that the light-emitting device is turned off if the communication mode is the standby mode, the light-emitting device is turned on if the communication mode is the transmission mode and if the speech signal to be transmitted is not the speech segment, the light-emitting device is turned on if the communication mode is the transmission mode, if the speech signal to be transmitted is the speech segment, and if the speech quality of the speech signal to be transmitted is evaluated as bad, and the light-emitting device is repeatedly turned on and off if the communication mode is the transmission mode, if the speech signal to be transmitted is the speech segment, and if the speech quality of the speech signal to be transmitted is evaluated as good. 14. The communication apparatus according to claim 11, wherein the first and second sound pick-up units are a main microphone and a sub-microphone, respectively, and the main microphone and the sub-microphone are arranged at a front face and a rear face of the communication apparatus, respectively.

	15. The communication apparatus according to claim 9, wherein the speech-segment determination unit converts the first signal input from the first sound pick-up unit into a signal component in unit of a specific length in a frequency domain and determines whether the first signal carries a voice component or a noise component based on a spectrum component of the signal component thus converted into the frequency domain.