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UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA

SONOS, INC., Plaintiff, v. GOOGLE LLC, Defendant.	Case No. 2:20-cv-00169-JAK (DFMx) **SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT** **JURY TRIAL DEMANDED**

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SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT

1. Plaintiff Sonos, Inc. ("Sonos" or "Plaintiff") hereby asserts the following claims for patent infringement of United States Patent Nos. 7,571,014, 8,588,949, 9,195,258, 9,219,959, 10,031,715, 10,209,953, 10,439,896, 10,541,883, 10,966,025, and 11,080,001 ("patents-in-suit"; attached hereto as Exhibits 1-5, 108-110, and 130-131) against Defendant Google LLC ("Google" or "Defendant"), and alleges as follows:

INTRODUCTION

2. In the early 2000s, Sonos pioneered what is known as wireless multi-room audio, bringing its first commercial products to market in 2005. In recognition of its wide-ranging innovations, the U.S. Patent & Trademark Office has granted Sonos more than 1,600 patents, including the patents-in-suit. The innovations captured by these patents cover many fundamental aspects of wireless multi-room audio devices and systems, including, for example, how to set up a playback device on a wireless local area network, how to manage and control groups of playback devices (*e.g.*, how to adjust group volume of playback devices and how to pair playback devices together for stereo sound), how to synchronize the play back of audio within groups of playback devices, and how to designate different roles or responsibilities to the members of a group of playback devices.

3. Commercial success did not come easy for Sonos as its vision was in many ways ahead of its time. But year by year, consumers – and the entire industry – came to appreciate that wireless multi-room audio could not only work, but could become an essential part of the listening experience. Success required staying true to Sonos's disruptive vision, which in turn required enormous investments in research and development. Indeed, as the pioneer in wireless multi-room audio, Sonos's research and development resulted in commercial products that embodied technology and user experiences that made wireless multi-room audio successful. While Sonos demonstrated its vision to the market,

other would-be competitors sat back letting Sonos take the risk and expense with demonstrating to the market the value of Sonos's vision. Only after Sonos had charted this course did competitors, like Google, come out and copy Sonos's products and its patented technology.

4. To this day, Sonos remains focused on innovations that further enhance the listening experience. Sonos invests heavily in research and development and, as a result, frequently invents new devices and systems with new technologies, enhanced functionality, improved sound quality, and an enriched user experience.

5. Recognizing Sonos's success, many competitors have tried to emulate Sonos's products, but history has proven that this is not possible without utilizing Sonos's patented technologies. For example, as early as 2011, Google engineers and employees were familiar with Sonos and its products and recognized Sonos's commercial success. Just a few years later, when Google set its sights on developing a suite of smart home products, it copied Sonos's products and Sonos's patented technology. Since 2015, Google's misappropriation of Sonos's patented technology has only proliferated, as Google has expanded its wireless multi-room audio system to more than a dozen different infringing products, including, for example, Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with the Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point (individually or collectively, "Google Audio Player(s)" or "Cast-enabled media player(s)"), all of which can be controlled by, for example, the YouTube Music app, the Google Play Music app, and the Google Home app (individually or collectively, "Google App(s)").

6. Worse still, Google's willful infringement of Sonos's patents has persisted to this day despite the fact that Sonos warned Google of its infringement

on at least ten separate occasions dating back to 2016, and initiated this suit, as well as a parallel suit against Google before International Trade Commission (ITC) in 2020, the latter of which resulted in a finding that Google infringed all five of the Sonos patents asserted in the ITC (the same five patents originally asserted in this case).

7. Instead of halting its infringing activities after being adjudged an infringer, Google made changes to its products that are insufficient to avoid infringement. That is, due to the broad scope of Sonos's patent portfolio, Google's revised products continue to infringe several other of Sonos's patents, including three patents that Sonos added in its First Amended Complaint and two patents that Sonos is adding in this Second Amended Complaint.[1] Indeed, changes by Google to try to avoid particular patents will not avoid infringement of Sonos's wider patent portfolio, which Sonos diligently developed over the past 20 years and which covers numerous fundamental aspects of a commercially successful wireless multi-room audio system. Sonos's patent portfolio originates from the products Sonos introduced in 2005, nearly 10 years before Google introduced its first wireless multi-room audio products. And as evidenced by the ITC rulings, Sonos's patented technology is still used today in Sonos's products as well as being misappropriated by others like Google.

8. The harm caused by Google's infringement has been profoundly compounded by Google's business strategy of using its multi-room audio products to vacuum up invaluable consumer data from users to further entrench the Google platform among its users and to ultimately fuel its dominant advertising and search platforms. In furtherance of this strategy, Google has not merely copied Sonos's patented technology, it has copied Sonos's products

[1] Notwithstanding the ITC's findings to contrary, Sonos respectfully submits that Google's insubstantial "design-arounds" continue to infringe all five of the Sonos patents asserted in that investigation either literally or under the doctrine of equivalents and Sonos reserves the right to pursue such infringement in this case.

themselves while subsidizing the prices of Google's patent-infringing products to flood the market. These actions have caused and continue to cause significant damage to Sonos as Sonos has been forced to compete in the marketplace against its own patented technology being sold by Google at a loss as a part of a broader strategy to enter every American home.

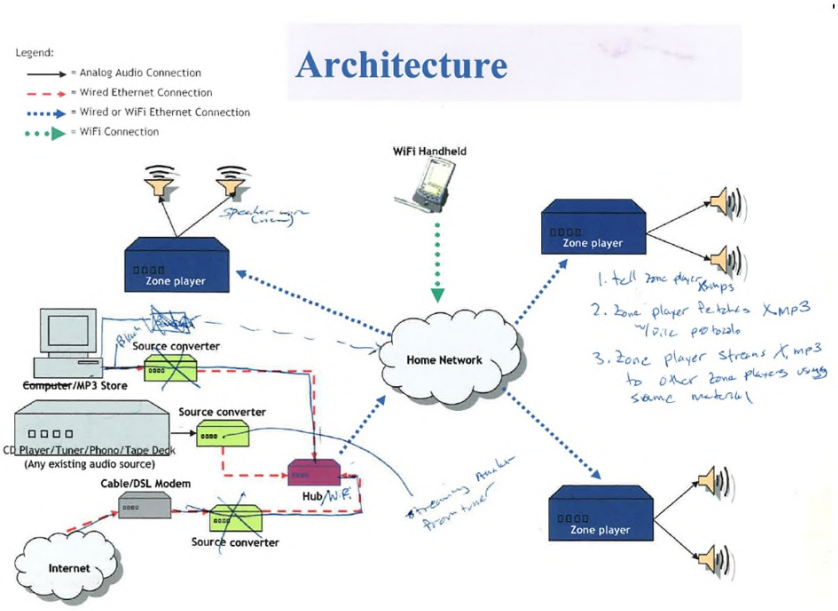
9. Sonos has brought this lawsuit to hold Google accountable for its willful infringement of Sonos's patent rights.

SONOS'S INNOVATION

10. Founded in 2002, Sonos invented what is known today as wireless multi-room audio. Ex. 6 (2013 *NBC News*: "If you're not familiar with Sonos, this company revolutionized the home audio world a decade ago…."); Ex. 7 (2015 *Men's Journal*: "Sonos almost singlehandedly established the stand-alone wireless home speaker system category….").

11. At the time of Sonos's founding, multi-room audio systems were dependent on a centralized receiver hard-wired to each individual passive speaker throughout a home or business. In sharp contrast, Sonos's system eliminated this dependency and, instead, relies on intelligent, networked playback devices to deliver premium sound wirelessly throughout a home or business. While conquering the challenge of inventing a multi-room wireless audio system was difficult in its own right, Sonos also built a system that is easy to setup, easy to use, customizable, readily integrated with other technologies and services, and effective in delivering outstanding sound quality in any home or business environment. *See, e.g.*, Ex. 8 (2005 *PC Magazine*: describing one of Sonos's first products as "the iPod of digital audio" for the home and contrasting Sonos with conventional home audio systems that required "dedicated wiring").

12. An early sketch of Sonos's wireless multi-room audio architecture is shown below:



13. Sonos launched its first commercial products in 2005 and has since released a wide variety of wireless multi-room audio products, including, for example, the Play:1, Play:3, Play:5, One, One SL, Move, Move 2, Roam, Roam SL, Era 100, Era 300, Playbar, Playbase, Beam, Ray, Sub, Connect, Port, Connect:Amp, Amp, Five, and Arc. *See, e.g.*, Ex. 9. Sonos's products can be set up and controlled by the Sonos app. *Id.*

14. A sampling of Sonos's product lineup is shown below.

15. Sonos's products are consistently hailed as setting the standard for the industry. *See, e.g.*, Ex. 10 (2018 *Digital Trends*: "Sonos is the king of multiroom audio . . . ."); Ex. 11 (2019 *What Hi-Fi*: "[N]o multi-room offering is as complete or as pleasurable to live with as Sonos.").

16. Sonos's products are also compatible with many different third-party music streaming services, and Sonos has entered into partnerships with dozens of them to integrate their services into the Sonos platform. *See, e.g.*, Ex. 12. For example, in 2013, Sonos started working closely with Google to integrate the Google Play Music streaming service, and Google Play Music launched on the Sonos platform in 2014 (with Google's YouTube Music service added later). *See, e.g.*, Ex. 13. As recognized at the time, Sonos's integration work with Google was especially "deep" and gave Google a wide aperture through which to view Sonos's proprietary technology. *Id*. (2014 *Wired*: "Now, Google Play Music will be available as an option to Sonos owners via the Sonos controller app (iOS, Android, and web). And, for the first time, the Google Play Music Android app is getting updated with a button that lets users easily play music from any Sonos speaker in the house. This is the first time this sort of deep integration has happened between a third party music service and Sonos.").

17. As a pioneer in wireless audio, Sonos has been and continues to be at the forefront of technological innovation and diligently protects its inventions. Leading outside organizations have recognized the value of Sonos's ingenuity. For example, Sonos earned a spot on the IPO list of "Top 300 Organizations Granted U.S. Patents" and the IEEE recognized Sonos as having one of "[t]he technology world's most valuable patent portfolios." *See* Exs. 14, 15. Currently, Sonos is the owner of more than 1,500 United States patents related to audio technology. Sonos's patents cover important aspects of wireless multi-room audio systems, such as setting up a playback device on a wireless local area network, managing and controlling groups of playback devices (*e.g.*, adjusting

group volume of playback devices and pairing playback devices together for stereo sound), synchronizing playback of audio within groups of playback devices, and designating roles or responsibilities to the members of a group of playback devices. These features are covered by the patents-in-suit.

18. Sonos identifies many of its patents on the "Patents" webpage of Sonos's website. *See* Ex. 16. In addition, Sonos encloses notices of its patents with its product inserts/manuals, which state that "[o]ur patent-to-product information can be found here: sonos.com/legal/patents." *See, e.g.*, Exs. 9, 17. Sonos also provides a link in the Sonos app to sonos.com/en-us/legal/terms through which the "Patents" webpage of Sonos's website can be accessed. *See* Ex. 18.

GOOGLE'S INFRINGEMENT

19. In 2015, a decade after Sonos's first product launch, Google released its "Chromecast Audio" – an audio adapter/dongle that can turn a speaker with an auxiliary port into a wireless, networked speaker. While the Chromecast Audio product did not launch with Sonos's patented multi-room audio functionality, Google clearly understood the importance of this popular audio feature as it released a multi-room audio software update only a couple of months after launch. *See* Ex. 19 (2015 The Guardian: "Google is also working on multi-room audio streaming using the Chromecast Audio, but it will not support the popular feature out of the box.").

20. In announcing its multi-room software update, Google explained the importance of this added functionality:

> A couple of months ago we launched Chromecast Audio. . . . Today we're starting to add two new features to the latest software update to elevate your listening experience. . . . Now you can easily fill every room in your home-bedroom, kitchen, living room, or wherever you have a Chromecast Audio connected-with synchronous music. Multi-

> room lets you group Chromecast Audio devices together so you can listen to the same song on multiple speakers.

Ex. 20 (December 2015 *Google Chrome Blog*).

21. As observed in a 2015 *Variety* article entitled "Google's Chromecast Audio Adapter Gets Multi-Room Support Similar to Sonos," Google's updated Chromecast Audio was considered a "major" advancement for Google and was recognized as competing directly with Sonos because of its similar multi-room capability:

> Google's recently-launched Chromecast Audio adapter is getting a major feature update this week: Consumers will now be able to group multiple Chromecast audio adapters to stream their favorite music simultaneously in more than one room, similar to the multi-room support available for internet-connected loudspeakers like the ones made by Sonos.

Ex. 21.

22. To control the multi-room Chromecast Audio, Google also provided a Chromecast app with multi-room audio functionality similar to the Sonos app. As observed in a 2015 article by *Pocket-Lint*, Google's multi-room app "can pretty much do the same thing" as Sonos's app:

> [Chromecast Audio]'s been updated to make it more comparable to Sonos, a smart speaker system that wirelessly streams all your Hi-Fi music to any room, or every room. You control your Sonos experience with one app. Well, thanks to a new software rollout, Chromecast Audio can pretty much do the same thing.

Ex. 22.

23. The media comparisons between Google's Chromecast Audio and Sonos's products are a result of the fact that, on information and belief, Google copied key features from Sonos. These features include, for example, Sonos's

patented technology for setting up a playback device on a wireless local area network, adjusting group volume of playback devices, synchronizing playback of audio within groups of playback devices, and designating roles or responsibilities to the members of a group of playback devices.

24. Moreover, as explained above, Google released the Chromecast Audio merely two years after partnering with Sonos to integrate Google Play Music into the Sonos platform. On information and belief, Google exploited the knowledge of Sonos's system that it gained from this integration work to develop its multi-room Chromecast Audio product and infringe Sonos's patents.

25. Over the next four years, Google aggressively expanded its line of multi-room wireless audio products through new product releases and software updates. On information and belief, with each iteration, Google's copying of Sonos's products and patented technology became even more blatant.

26. For example, on information and belief, in 2016, a year after Google launched the Chromecast Audio wireless adapter, Google escalated its copying of Sonos by releasing the Google Home multi-room audio player (which was controlled by Google's rebranded multi-room controller app – the Google Home app). Unlike the Chromecast Audio, the Google Home added an internal speaker driver making it an "all-in-one" audio player akin to Sonos's prior Play:1, Play:3, and Play:5 products.

27. As with the Chromecast Audio, the Google Home was recognized as a direct attack on Sonos. When the Google Home was announced, for example, *The Register* observed that "[n]o market is safe from [the] search engine monster" and that Google was in particular "offering new products to compete with Sonos in the music streaming market." *See* Ex. 23. *The Register* also further noted the conspicuous similarity that multiple "Google Homes will work with one another, allowing music to be spread into different rooms on command - like the very popular Sonos music system." *Id*.

28. Like *The Register*, *The Verge* also recognized the similarities between the new infringing Google Home and Sonos's prior products: "You can also group multiple Home units together and play music through all of them simultaneously, similar to how Sonos works." *See* Ex. 24.

29. Again, the media comparisons between Google's Home and Sonos's products reflected a darker truth that, on information and belief, Google had misappropriated Sonos's innovations. These innovations include, for example, Sonos's patented technology for setting up a playback device on a wireless local area network, adjusting group volume of playback devices, synchronizing playback of audio within groups of playback devices, and designating roles or responsibilities to the members of a group of playback devices. Notably, Google launched the Google Home product in November 2016 despite Sonos's prior warnings of infringement in August and October, as set forth below.

30. On information and belief, the Google Home proved to be merely another forerunner to further copying by Google. In 2017, Google released two additional "all-in-one" wireless multi-room products – the Google Home Max and the Google Home Mini. Google's Home Max in particular was seen as a "Sonos Clone" and a "not-so-subtle copy of the [Sonos] Play:5 speaker . . . ." Ex. 25. As explained by *Gizmodo*, "[i]t's also hard not to see the [Google Home Max] device as something of a jab at Sonos." *Id.*; *see also, e.g.*, Ex. 26 (2017 *Android Central*: "You can't help but look at Google Home Max . . . and come to the conclusion that Google is sticking its nose where Sonos has been for years.").

31. As with Google's other prior infringing products, on information and belief, Google also copied Sonos's patented technology for the Google Home Max. This patented technology includes, for example, Sonos's patented technology for setting up a playback device on a wireless local area network, adjusting group volume of playback devices, synchronizing playback of audio within groups of playback devices, and designating roles or responsibilities to the

members of a group of playback devices. With the Google Home Max, however, Google copied even more of Sonos's patented technology than it did with Google's previous wireless audio products. For instance, the Google Home Max also copied Sonos's patented "pairing" technology, which allows two playback devices to be paired together for stereo sound.

32. In contrast to the Google Home Max, which was priced similarly to Sonos's comparable products, the Google Home Mini predatorily implemented Sonos's valuable patented technology into an all-in-one wireless multi-room product that Google sells at a subsidized price point or even gives away for free. Ex. 27 ("At $49, Google Home Mini works on its own or you can have a few around the house, giving you the power of Google anywhere in your home."); Ex. 28 ("Google partnered with Spotify to offer Home Minis as a free promotion for Spotify Premium customers. Spotify's premium userbase is nearly 90 million, so if even a fraction of users take the free offer, a massive influx of Google smart speakers will enter the market."). As is well understood, Google uses its Home Mini as a "loss leader" to generate additional revenue from other revenue streams that are bolstered and/or enabled by the sale of Google's wireless multi-room audio products. *See, e.g.*, Ex. 28 (explaining that Google is using its smart speaker devices as a "'loss leader' to support advertising or e-commerce.").

33. As explained further below, Google has continued to expand its suite of infringing products since 2017 including after Sonos initiated this suit and the parallel ITC investigation.

34. Google's pervasive copying of Sonos's products and patented technology has resulted in an infringing product line that now includes at least the Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point, all of which can be controlled by, for example, the

YouTube Music app, the Google Play Music app, and the Google Home app. *See, e.g.*, Exs. 29-39, 111-113.[2]

35. The image below shows a few of the infringing Google Audio Players on the left and some of Sonos's prior products on the right.

36. In addition to providing the various software Google Apps for controlling the Google Audio Players, Google also offers various infringing hardware controller devices that are pre-installed with the Google Play Music app and/or YouTube Music app (and capable of downloading and executing the Google Apps that are not pre-installed). These infringing hardware controller devices include, for example, Google's "Pixel" phones, tablets, and laptops (*e.g.*, the Pixel 3, Pixel 3 XL, Pixel 3a, Pixel 3a XL, Pixel 4, Pixel 4 XL, Pixel 4a, Pixel 4a (5G), Pixel 5, Pixel 5a, Pixel 6, Pixel 6 Pro, Pixel 6a, Pixel 7, Pixel 7 Pro, Pixel 7a, Pixel Fold, Pixel 8, Pixel 8 Pro, Pixel 8a, Pixel 9, Pixel 9 Pro, Pixel 9 Pro XL, and Pixel 9 Pro Fold phones, the Pixel Slate and Pixel Tablet tablets, and the Pixelbook and Pixelbook Go laptops) (individually or collectively, "Google Pixel Device(s)"). Google also makes the infringing Google Apps available to be downloaded and installed on user devices not manufactured by Google itself including iOS-compatible devices, such as iPhones and iPads, and devices manufactured by Samsung, such as Samsung mobile phones, among others. *See, e.g.*, Exs. 40-43.[3]

[2] Any reference to a "Google Audio Player" or a "Google App" includes each version and generation of such player/app unless otherwise noted.
[3] Any reference to a "Google Pixel Device" includes each version and generation of such device unless otherwise noted.

37. Herein, "Google Wireless Audio System" refers to one or more Google Audio Players, one or more Google Pixel Devices, and/or one or more Google Apps.

FOR YEARS, SONOS ATTEMPTED TO REMEDY GOOGLE'S INFRINGEMENT WITHOUT TURNING TO THE COURTS

38. Since 2015, Google's misappropriation of Sonos's patented technology has proliferated. Over the years, Google has expanded its wireless multi-room audio suite of products to more than a dozen infringing products, including:

- Chromecast
- Chromecast Ultra
- Chromecast Audio
- Chromecast with Google TV
- Google TV Streamer (4K)
- Pixel Tablet with Charging Speaker Dock
- Home Mini
- Nest Mini
- Home
- Home Max
- Home Hub
- Nest Hub
- Nest Hub Max
- Nest Audio
- Nest Wifi Point
- Google Home App
- Google Play Music App
- YouTube Music App
- Pixel phones

- Pixel tablets
- Pixel laptops

39. Google has persisted in its infringement even though Sonos has warned Google of its infringement on at least ten separate occasions dating back to 2016.

40. For example, in 2016 (a year after Google launched the Chromecast Audio wireless adapter), Google released the Google Home multi-room audio player (which was controlled by Google's rebranded multi-room controller app – the Google Home app). Unlike the Chromecast Audio, the Google Home added an internal speaker driver making it an "all-in-one" audio player akin to Sonos's prior Play:1, Play:3, and Play:5 products.

41. Sonos raised the issue of infringement as to these products with Google as early as August 2016. Sonos hoped that Google would respect Sonos's intellectual property and Sonos's extensive investment in developing its products. But Google did no such thing.

42. On September 2, 2016, Sonos sent John LaBarre and Allen Lo at Google a document identifying 24 issued Sonos patents and 4 allowed Sonos patent applications, including the '258 Patent, the '949 Patent, the '014 Patent, and the '959 Patent asserted here. Ex. 114.

43. On October 13, 2016, Sonos sent John LaBarre, Allen Lo, and Louis Sorell at Google a document identifying 22 issued Sonos patents and 6 allowed Sonos patent applications, including again the '258 Patent, the '949 Patent, the '014 Patent, and the '959 Patent and identifying relevant Google products for each. Ex. 115.

44. On October 26, 2016, Sonos sent John LaBarre at Google a PowerPoint presentation identifying 29 issued Sonos patents and 3 allowed Sonos patent applications, including yet again the '258 Patent, the '949 Patent, the '014 Patent, and the '959 Patent. Ex. 116.

45. On January 31, 2018, Sonos sent Matthew Gubiotti at Google a PowerPoint presentation identifying 16 issued Sonos patents and 1 allowed Sonos patent application, including the ’959 Patent and the ’949 Patent, and identifying relevant Google products for each, including products accused in this case. Ex. 117.

46. On July 12, 2018, Sonos sent John LaBarre and Matthew Gubiotti at Google a document identifying 58 issued Sonos patents, including yet again the ’258 Patent, the ’949 Patent, the ’014 Patent, and the ’959 Patent and identifying relevant Google products for each.

47. On February 22, 2019, Sonos sent Matthew Gubiotti, Bradley Riel, and Tim Kowalski at Google a letter enclosing a link to an electronic repository containing 100 claim charts detailing Google’s infringement of 92 issued Sonos patents and 8 allowed Sonos patent applications, including the ’258 Patent, the ’949 Patent, the ’014 Patent, the ’953 Patent, the ’959 Patent, and the ’715 Patent asserted here.

48. On June 13, 2019, Sonos sent Bradley Riel and Tim Kowalski at Google a PowerPoint presentation reiterating the 100 claim charts detailing Google’s infringement of 92 issued Sonos patents and 8 allowed Sonos patent applications sent on February 22, 2019 and identifying 6 issued Sonos patents, including again the ’258 Patent and the ’949 Patent and identifying relevant Google products for each.

49. On January 6, 2020, Sonos sent Bradley Riel and Tim Kowalski at Google a pre-filing copy of an International Trade Commission Complaint, and a pre-filing copy of the Original Complaint for this case, which included claim charts detailing Google’s infringement of the ’258 Patent, the ’953 Patent, the ’959 Patent, the ’949 Patent, and the ’896 Patent.

50. However, despite these consistent and repeated warnings of infringement, Google did not stop infringing or even seriously engage in licensing

discussions. Instead, Google doubled down and introduced new infringing products, making use of even more of Sonos's patented technology.

51. For example, in 2016 and 2017, nearly eight years after Sonos introduced its first all-in-one audio player – the Play:5 – Google released its all-in-one audio players – the Google Home, Google Home Max, and the Google Home Mini. Google's Home Max in particular was seen as a "Sonos Clone" and a "not-so-subtle copy of the [Sonos] Play:5 speaker…" Ex. 25. As explained by Gizmodo, "[i]t's also hard not to see the [Google Home Max] device as something of a jab at Sonos." *Id.*; *see also, e.g.*, Ex. 26 (2017 Android Central: "You can't help but look at Google Home Max… and come to the conclusion that Google is sticking its nose where Sonos has been for years.").

52. Nothing Sonos did, including filing this suit or the parallel ITC proceeding described below, deterred Google from expanding its infringement.

GOOGLE'S CONTINUED INFRINGEMENT FORCED THIS SUIT AND THE ITC INVESTIGATION

53. In order to hold Google accountable for its willful infringement of Sonos's patents, in January 2020, Sonos filed this suit and a parallel complaint asking the ITC to institute an investigation into Google's unlawful importation into, and sale in, the United States of infringing products. The ITC instituted an investigation, *In re Certain Audio Players and Controllers, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-1191, to determine whether Google's audio players and controllers infringe the '258 Patent, the '953 Patent, the '949 Patent, the '959 Patent, and the '896 Patent, which are five of the patents asserted in this case.

54. This case was stayed pending the completion of the ITC investigation.

55. During the ITC Investigation, Google unabashedly continued to increase its infringement. For example, press reports indicated that Google was

introducing new products and changes that meant that Google is "one step closer to replacing your Sonos system." Ex. 118; *see also* Ex. 119 ("The new functionality appears to be the most direct challenge to the likes of Sonos, which has enjoyed enormous success by creating a series of connected speakers and soundbars that can play music simultaneously – or individually."). The press similarly noted that Google's new Nest Audio speaker "could be a new rival for the likes of the Sonos One, the best smart speaker you can buy in 2020." Ex. 120; *see also* Ex. 119 ("Just like Sonos, you can also change the volume on each speaker individually from the main interface."). And press reports indicated that Google expanded its use of Sonos's stereo pair technology into new smart speakers even though Google was being sued for infringing Sonos's '959 Patent directed to this technology. Exs. 119, 121.

56. Google's aggressive and deliberate expansion of its use of Sonos's patented technology has led observers to conclude that "[n]o market is safe from [the] search engine monster" and that Google was specifically "offering new products to compete with Sonos in the music streaming market." *See* Ex. 23.

57. During the ITC investigation, Google developed "redesigned" versions of its infringing products with minor, insubstantial design changes in an attempt to avoid an ITC remedy resulting from its infringement of the '258 Patent, the '953 Patent, the '949 Patent, the '959 Patent, and the '896 Patent.

58. The ITC investigation concluded with a final determination that Google's original products infringed each of the '258 Patent, the '953 Patent, the '949 Patent, the '959 Patent, and the '896 Patent, but that its "redesigned" versions of the accused products did not infringe any of the '258 Patent, the '953 Patent, the '949 Patent, the '959 Patent, and the '896 Patent. Further, the ITC's final determination concluded that each of the '258 Patent, the '953 Patent, the '949 Patent, the '959 Patent, and the '896 Patent were not invalid.

GOOGLE'S INFRINGEMENT HAS BEEN WILLFUL

59. Sonos warned Google two more times during and after the ITC investigation that Google was continuing to infringe the patents Sonos already told Google about from 2016-2020, as well as many more of Sonos's patents.

60. For example, on August 13, 2021, Sonos sent a letter to Renny Hwang, Patrick Weston, Tim Kowalski, and Bradley Riel at Google explaining that Google was still infringing the patents Sonos told Google about from 2016-2020, including the patents charted against Google in 2019, as well as many others, including the '014 Patent, the '258 Patent, the '959 Patent, the '949 Patent, the '896 Patent, the '953 Patent, the '715 Patent, the '001 Patent, the '025 Patent, and the '883 Patent. Ex. 128.

61. And on December 4, 2023, Sonos sent a letter to Patrick Weston and Tim Kowalski at Google explaining that Google was still infringing the patents Sonos told Google about from 2016-2021, as well as many others, including the '014 Patent, the '258 Patent, the '959 Patent, the '949 Patent, the '896 Patent, the '953 Patent, the '715 Patent, the '001 Patent, the '025 Patent, and the '883 Patent. Ex. 129.

62. As it had done with Sonos's prior notices of infringement, Google ignored these notices and continued to infringe, including by commercially releasing the redesigned versions of its products.

63. The final determination by the ITC should have sent a clear message to Google that Google was misappropriating Sonos's patents rights and should stop its willful infringement. Instead, Google commercially released its "redesigned" products even though Google knew that those "redesigned" products infringed numerous other Sonos patents, including patents that Sonos had warned Google it was infringing, such as the '715 Patent, the '001 Patent, the '014 Patent, the '025 Patent, and the '883 Patent. And for products that were not subject to the ITC investigation, like iOS or Samsung versions of the Google Apps, Google

made no changes at all, even though these versions of the Google Apps contained the same features that were adjudicated as infringing by the ITC.

64. More specifically, Google did not introduce "redesigned" versions of all of its products. Instead, Google only introduced "redesigned" versions of products that were within the limited scope of the ITC investigation, like versions of the Google Home App that run on Google's Pixel phones, tablets, and computers. This meant that, for example, Google continued to infringe at least the '949 Patent and the '896 Patent by providing versions of the Google Home App designed to run on non-Google manufactured phones, tablets, and computers, like iOS and Samsung devices. These versions of the Google Home App, for example, still contained the features that were found to practice the asserted claims of the '949 Patent and '896 Patent in the ITC investigation. In this way, Google continued to deliberately infringe these patents even after the ITC had just adjudged Google as an infringer.

65. And despite commercially releasing "redesigned" versions for some products, Google decided to keep the infringing features in its other products because they are superior features and drive consumer demand. In fact, when Google removed the features found to infringe the '949 Patent from some of its products, consumers instantly complained that these products were now inferior.

66. Worse, Google completely ignored the fact that the "redesigned" versions of its products infringe other Sonos patents, including the additional patents asserted by way of its First Amended Complaint and this Second Amended Complaint, which Sonos put Google on notice of prior to Google's release of those "redesigned" versions. In this way, Google plowed forward with its "redesigned" products knowing they still infringe many of Sonos's patents that Sonos already brought to Google's attention, including the '014 Patent, '715 Patent,'001 Patent,'025 Patent, and '883 Patent, which are now asserted in this case.

67. Still further, as soon as the ’949 Patent expired, Google added back the features that were found to practice the asserted claims of the ’949 Patent. This included adding back group volume control features to Google’s Nest Hub displays and to Android versions of the Google Home App designed to run on Google-manufactured phones, tablets, and computers, like Google’s Pixel products. But Google ignored the fact that these features still practice the non-expired ’014 Patent, which Sonos put Google on notice of as far back as 2016.

68. The foregoing establishes that Google was, over at least an eight-year period, repeatedly put on notice of Sonos's patents, including each of the eight patents now asserted in this case, as they relate to the specific products accused in this case. The following chart illustrates the notices Google has received from Sonos concerning the patents-in-suit.

Pat.	Notice 1	Notice 2	Notice 3	Notice 4	Notice 5	Notice 6	Notice 7	Notice 8	Notice 9	Notice 10
'258 Issued: 11/24/15	9/2/16	10/13/16	10/26/16		7/12/18	2/22/19	6/13/19	1/6/20	8/13/21	12/4/23
'949 Issued: 11/19/13	9/2/16	10/13/16	10/26/16	1/31/18	7/12/18	2/22/19	6/13/19	1/6/20	8/13/21	12/4/23
'014 Issued: 8/4/09	9/2/16	10/13/16	10/26/16		7/12/18	2/22/19			8/13/21	12/4/23
'959 Issued: 12/22/15	9/2/16	10/13/16	10/26/16	1/31/18	7/12/18	2/22/19		1/6/20	8/13/21	12/4/23
'715 Issued: 7/24/18						2/22/19			8/13/21	12/4/23
'896 Issued: 10/8/19								1/6/20	8/13/21	12/4/23
'953 Issued: 2/19/19						2/22/19		1/6/20	8/13/21	12/4/23
'001 Issued: 8/3/21									8/13/21	12/4/23
'025 Issued: 3/30/21									8/13/21	12/4/23
'883 Issued: 1/21/20									8/13/21	12/4/23

69. At a minimum, Google's knowledge and Sonos's repeated and persistent disclosure establishes that Google was, for some time periods, at least willfully blind to the fact that the asserted patents existed and, for other time periods, had years of actual knowledge of the asserted patents and of Google's infringement thereof. Further, this knowledge and repeated and persistent

disclosure establishes that Google, for some time periods, had at least failed to investigate whether it infringed the asserted patents despite the existence of a high risk of infringement and, for other time periods, had actual knowledge of a credible and specific allegation of infringement of the asserted patents. In this way, Google was, or at least should have been, aware of each of the asserted patents starting from at least their respective dates of issuance and of its infringement thereof.

70. Moreover, Google has been aware of (or, at a minimum, was willfully blind to) Sonos's patents well before August 2016 in view of Sonos's previously-filed patent litigation against D&M (another direct competitor of Sonos and Google) and its infringing Denon HEOS system – *Sonos Inc. v. D&M Holdings, Inc.*, C.A. No. 14-1330-RGA (D. Del.) ("the D&M Litigation"). *See* Ex. 47. This prior litigation, initiated in 2014, lasted more than three years, garnered media attention across the industry, and resulted in a jury verdict for Sonos on all counts, including, *inter alia*, willful infringement of two of the patents-in-suit asserted here against Google – United States Patent Nos. 8,588,949 and 9,195,258. *See*, *e.g.*, Ex. 48 (2014 *VentureBeat* article entitled "Sonos sues Denon, alleging wireless speaker patent infringement"); Ex. 49 (2014 *CNET* article entitled "Sonos sues Denon for 'copying' its wireless products"); Ex. 50 (*Sonos v D&M* jury Verdict Form finding for Sonos on all counts).

71. Further, Google has also been aware of (or, at a minimum, was willfully blind to) Sonos's patents well before Sonos provided Google notice of infringement because Google's development of competitive products since the launch of its Google Wireless Audio System in 2015 occurred against the backdrop of: 1) a decade in which Sonos was the recognized pioneer in the wireless audio industry; 2) Google's partnership with Sonos dating to at least as early as 2013; and 3) Sonos's prominent display of its patents on Sonos's website,

and Sonos's inclusion of a notice of its patents in Sonos's product inserts/manuals, as well as the Sonos app.

GOOGLE'S UNJUST ENRICHMENT

72. Google's infringement of Sonos's patented inventions has paved the way for Google to generate billions of dollars in revenue. A December 2018 market report by *Royal Bank of Canada*, for example, concluded that Google has sold over 40 million Google Home devices in the U.S. and that Google generated $3.4 billion in Google Home revenue in 2018 alone. Ex. 44 at p. 1, 4, 14-15. *Royal Bank of Canada* also found that, as of August 2017, Google had sold more than 55 million Chromecast devices and that Google generated $998 million in Chromecast revenue in 2018. *Id*. at p. 4, 16. Further, *Royal Bank of Canada* estimated that, in 2018, Google generated $3.4 billion in Pixel device revenue. *Id*. at p. 4, 16, 18.

73. By 2021, RBC estimated that Google will be annually selling over 100 million Google Home devices in the U.S. and generating over $8 billion in Google Home revenue. *Id*. at 4, 14-15. In addition, by 2021, RBC estimated that Google will annually generate $2.4 billion in Chromecast revenue and nearly $7 billion in Pixel device revenue. *Id.* at 4, 8, 18. Today, Forbes estimates that Google is worth over $2 trillion dollars. *See* https://www.forbes.com/companies/google/.

74. Moreover, the revenue obtained from sale of Google's hardware devices presents an incomplete picture of the full value to Google, as Google is selling the infringing products at a discount and/or as a "loss leader" to generate future revenue. For instance, on information and belief, Google's copying of Sonos's patented inventions has helped and/or will help Google generate significant revenue from the use of Google's hardware devices including advertising, data collection, and search via the Google Wireless Audio Systems. As the *New York Post* explained, "Amazon and Google both discounted their

home speakers so deeply over the holidays that they likely lost a few dollars per unit . . . hoping to lock in customers and profit from later sales of goods and data about buying habits." Ex. 45. Similarly, *News Without Borders* explained that companies like Google are using their "smart speaker" devices as "'loss leader[s]' to support advertising . . . ." Ex. 28.

75. On information and belief, Google's copying of Sonos's patented inventions has also helped and/or will help Google generate significant revenue from driving its users to make follow-on purchases such as streaming music subscriptions and retail purchases via the Google Wireless Audio Systems. For example, an *NPR* "smart speaker" survey found that 28% of survey respondents agreed that "[g]etting a Smart Speaker led [them] to pay for a music subscription service," and Google offered two such subscriptions – Google Play Music and YouTube Music. Ex. 46 at p. 20. Likewise, the *NPR* survey also found that 26% of respondents use their smart speakers "regularly" to "add [items] to shopping list." *Id*. at p. 15; *see also*, *e.g.*, Ex. 28 (stating that companies like Google are using their "smart speaker" devices as "'loss leader[s]' to support . . . e-commerce.").

76. On information and belief, Google is willfully infringing Sonos's patents as part of Google's calculated strategy to vacuum up invaluable consumer data from users and, thus, further entrench the Google platform among its users and fuel its dominant advertising and search platforms.

THE PARTIES

77. Plaintiff Sonos, Inc. is a Delaware corporation with its principal place of business at 301 Coromar Drive, Goleta, California, 93117. Sonos is the owner of the patents-in-suit.

78. Defendant Google LLC is a Delaware limited liability corporation with its principal place of business at 1600 Amphitheatre Parkway, Mountain View, CA 94043. Google LLC also maintains other established places of

business, including established places of business in this district at, for example, 340 Main St, Venice, CA 90291 and 12422 W Bluff Creek, Playa Vista, CA 90094.

79. Google LLC is one of the largest technology companies in the world and conducts product development, engineering, sales, and online retail, search, and advertising operations in this district.

80. Google LLC directly and/or indirectly develops, designs, manufactures, distributes, markets, offers to sell, sells, and/or imports the infringing Google Wireless Audio System at issue in this litigation in/into the United States, including in the Central District of California, and otherwise purposefully directs infringing activities to this District in connection with its Google Wireless Audio System.

JURISDICTION AND VENUE

81. As this is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*., this Court has subject matter jurisdiction over the matters asserted herein under 28 U.S.C. §§ 1331 and 1338(a).

82. This Court has personal jurisdiction over Google because, pursuant to Fed. R. Civ. P. 11(b)(3), Google has: (1) availed itself of the rights and benefits of the laws of the State of California, (2) transacted, conducted, and/or solicited business and engaged in a persistent course of conduct in the State of California (and in this District), (3) derived substantial revenue from the sales and/or use of products, such as the infringing Google Wireless Audio System, in the State of California (and in this District), (4) purposefully directed activities (directly and/or through intermediaries), such as shipping, distributing, offering for sale, selling, and/or advertising its infringing Google Wireless Audio System, at residents of the State of California (and residents in this District), (5) delivered its infringing Google Wireless Audio System into the stream of commerce with the expectation

that the Google Wireless Audio System will be used and/or purchased by consumers, and (6) committed acts of patent infringement in the State of California (and in this District).

83. This Court also has personal jurisdiction over Google because it is registered to do business in the State of California and has one or more regular and established places of business in the Central District of California.

84. Venue is proper in this District under the provisions of 28 U.S.C. § 1400(b) because, as noted above, Google has committed acts of infringement in this district and has one or more regular and established place of business in this district.

PATENTS-IN-SUIT

Background

85. Sonos was founded to solve various shortcomings in existing conventional audio technology. At the time, a "conventional multi-zone audio system" was based on a "centralized" device that was "hard-wired" to "audio players" in different rooms with dedicated speaker wire. *See, e.g.*, '949 Patent at 1:41-47, 1:57-60; *see also, e.g.*, '959 Patent at 6:54-61. These "audio players" were basic "speakers" that passively received and outputted audio signals but lacked processing capabilities. *See, e.g.*, '949 Patent at 1:41-60.

86. In this conventional "hard-wired" configuration, each audio player relied on a "centralized" device that managed and controlled the multi-zone audio system. Under this approach, audio sources were either hard-wired to the "centralized" device, which made playing different audio sources at different audio players difficult (if not impossible), or hard-wired locally at a given audio player, which "[made] source sharing difficult." *See, e.g.*, '949 Patent at 1:45-56. For example, before an audio player could play audio from a source, a user had to configure the centralized device to route audio to the audio player from the common source. *See, e.g.*, *id.* at 1:50-60.

87. In these conventional "hard-wired" systems, it was difficult or impossible to play different audio sources on different audio players, "group" and control audio players, access and play network-based audio sources (*e.g.*, Internet radio), and install and configure the system in the first instance, which required physically connecting every device to the "centralized" device. *See, e.g.*, '949 Patent at 1:34-2:13; '959 Patent at 6:52-61.

88. As recognized in 2005 when Sonos released its first products, Sonos developed a series of new technologies to solve the many shortcomings of conventional hard-wired audio systems, thereby revolutionizing the field. In turn, Sonos's own introduction of paradigm-shifting technology created new technological opportunities and/or challenges that Sonos further solved.

89. For starters, Sonos provided an unconventional system architecture comprising "zone players" (also referred to as "playback devices") on a computer data network that were controlled by physical "controller" devices. *See, e.g.*, '949 Patent at FIG. 1; '258 Patent at FIG 1. The following figure illustrates a simplified diagram of an exemplary Sonos audio system in accordance with this new system architecture, which comprises "zone players" 102, 104, and 106 and "controllers" 140 and 142 coupled to one another by a local data network 108 and two local audio sources 110 and 112 along with a connection to the Internet:

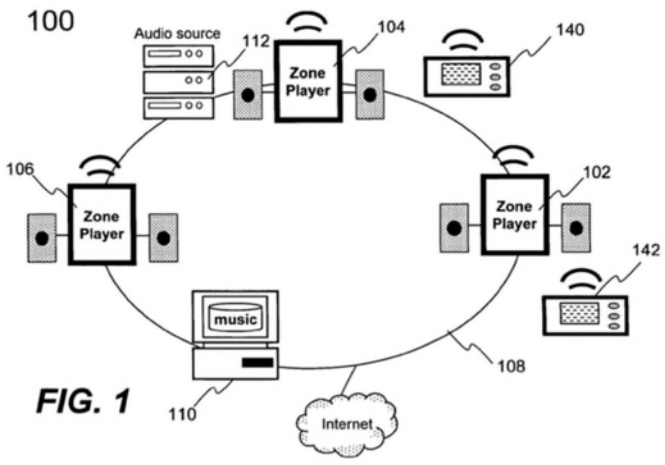


FIG. 1

'949 Patent at FIG. 1; *see also, e.g.*, '258 Patent at FIG. 1.

90. Unlike audio players in conventional "centralized," "hard-wired" multi-zone audio systems, Sonos's "zone players" were "independent playback devices" with a data network interface and processing intelligence enabling each "zone player" to independently access and play back any audio source available on a local data network or another data network coupled thereto (*e.g.*, the Internet) without a centralized device. *See, e.g.*, '949 Patent at 4:60-64, 5:2-36, 9:50-52, Claims 1, 8, 15; '258 Patent at 1:33-44, 2:40-3:22, Claims 1, 11, 17.

91. The new, unconventional nature of Sonos's "zone players" introduced additional technological challenges to Sonos's system, which required Sonos's "zone players" to have new intelligence enabling the "zone players" to "share information" with one another so that they could "reproduce audio information synchronously," among other unconventional capabilities. *See, e.g.*, '258 Patent at 31:34-41. Thus, Sonos's new system featured "zone players" that could simultaneously play different audio from different sources or be "grouped" together to play the same audio source in a synchronized manner. *See, e.g.*, '258 Patent at FIG. 1, 3:50-61, 4:22-50, 5:10-6:64, Claims 1, 11, 17; '949 Patent at 2:28-48, 9:49-59, Claims 1, 8, 15. And while operating within a "group," each "zone player" would be designated to take on certain roles or responsibilities within the "group" of "zone players." *See, e.g.*, '001 Patent at 6:58-7:3, 8:2-9:36, Claims 1, 12, 23.

92. Further, unlike the "pre-configured and pre-programmed controller[s]" used to control conventional "centralized," "hard-wired" audio systems, Sonos's "controller" devices were capable of remotely controlling any "zone player" in a Sonos audio system from anywhere in a user's house or the like via a data network. *See, e.g.*, '949 Patent at 6:43-60; *see also, e.g.*, '258 Patent at 5:27-29, 5:38-40, 6:37-46. Building on the intelligence of Sonos's new "zone players," Sonos's "controllers" had new capabilities, including dynamically "grouping the zone players" and "control[ling] the volume of each of the zone

players in a zone group individually or together." '949 Patent at 6:43-60; *see also, e.g.*, '258 Patent at FIG. 1, 3:50-61, 4:22-50, 5:10-6:64, 9:17-26, Claims 1, 11, 17.

93. Thus, Sonos's audio system comprising networked "zone players" controlled by physical "controllers" over a data network provided an entirely new paradigm in home audio that overcame the technological deficiencies of conventional audio systems. Moreover, Sonos's unconventional system architecture created new technological challenges that needed to be solved and provided a new platform for further innovation. As discussed in further detail below, the Sonos patents-in-suit are directed to overcoming these technological challenges and building on this new platform.

U.S. Patent No. 7,571,014

94. Sonos is the owner of U.S. Patent No. 7,571,014 (the "'014 Patent"), entitled "Method and Apparatus for Controller Multimedia Players in a Multi-Zone System," which was duly and legally issued by the United States Patent and Trademark Office ("USPTO") on August 4, 2009. A Reexamination Certificate for the '014 Patent was duly and legally issued by the USPTO on September 1, 2017. A copy of the '014 Patent, including the Reexamination Certificate, is attached hereto as Exhibit 108.

95. The '014 Patent relates generally to devices, computer-readable media, and methods for controlling a plurality of playback devices on a local area network.

96. The '014 Patent recognized problems with conventional multi-zone audio systems. For instance, the '014 Patent recognized that "conventional multi-zone audio system[s]" were undesirably based on a "centralized" device that was "hard-wired" to "audio players" in different rooms with dedicated speaker wire. *See, e.g.*, '014 Patent at 1:34-40, 1:50-53. Moreover, because these "conventional multi-zone audio system[s]" were "either hard-wired or controlled by a pre-

configured and pre-programmed controller," it was "difficult for [a conventional] system to accommodate the requirement of dynamically managing the ad hoc creation and deletion of groups," among other disadvantages of conventional multi-zone audio systems. *See, e.g., id.* at 1:50-2:4.

97. In this regard, the '014 Patent recognized a need for solutions that addressed "the control of [ ] audio players as a group …." *See, e.g., id.* at 2:5-10. In particular, the '014 Patent recognized "a need for solutions in a multi-zone audio system to control a plurality of audio players and their audio characteristics from one controlling device" *See, e.g., id.* at 2:11-13. The claimed inventions of the '014 Patent are directed to technology that provides a solution to such needs. *See, e.g., id.* at 2:28-3:34.

The Inventions Claimed in U.S. Patent No. 7,571,014 Improved Technology & Were Not Well-Understood, Routine, or Conventional

98. Given the state of the art at the time of the inventions of the '014 Patent, including the deficiencies in "centralized," "hard-wired" multi-zone audio systems of the time, the inventive concepts of the '014 Patent cannot be considered to be conventional, well-understood, or routine. *See, e.g.*, '014 Patent at 1:34-2:10. The '014 Patent provides an unconventional solution to problems that arose in the context of "centralized," "hard-wired" multi-zone audio systems – namely, that such systems made it difficult (or impossible) to dynamically group audio players for synchronous playback and dynamically control such grouped audio players. *See, e.g., id.*

99. At the core of the '014 Patent are aspects of Sonos's unconventional system architecture – a "controller" and a plurality of "players" (*e.g.*, "zone players") communicating over a "local area network" (LAN). Further, unlike the "pre-configured and pre-programmed controller[s]" used to control conventional "centralized," "hard-wired" multi-zone audio systems, the '014 Patent's "controller" devices were unconventionally capable of controlling any "zone

player" in the system from anywhere in a user's house or business via the LAN, such as by dynamically "grouping the zone players" and "control[ling] the volume of each of the zone players in a zone group individually or together." *See, e.g.*, *id.* at 7:25-43.

100. In this respect, it was not well-understood, routine, or conventional at the time of the inventions of the '014 Patent to have a "controller" configured to (i) form a "zone group" that includes a plurality of "players," where one of the players serves as a "zone group head," and (ii) "synchroniz[e] all players in the zone group in accordance with the zone group head." *See, e.g., id.* at Claims 1, 25; *see also, e.g.*, Ex. 8 (*2005 PC Mag:* "[Sonos's ZonePlayers] can play the same music throughout the house, perfectly synchronized. Even though that may seem drop-dead simple, other hubs don't do it. And you can join multiple rooms to play the same music … on the fly.").

101. Furthermore, it was not well-understood, routine, or conventional at the time of the inventions of the '014 Patent to have a "controller" configured to (i) display a "zone group" that includes a plurality of "players" and (ii) adjust a "volume meter" for the group of players that is "represented by an averaged value of audio volumes of the players in the group," which includes "changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user." *See, e.g.*, '014 Patent at Claims 1, 16, 25, 38; *see also, e.g.*, Ex. 8 (*2005 PC Mag:* "Press the volume-down button, then slide the scroll wheel to select each room and set the volume for it. Once you're back to using the master volume control, the volume rises or falls relative to each room's existing setting. These are [] brilliant touches ….").

102. These are just exemplary reasons why the inventions claimed in the '014 Patent were not well-understood, routine, or conventional at the time of their invention.

103. The unconventional nature of the ’014 Patent has also been confirmed by wide-spread industry praise for the patented technology of the ’014 Patent as an advancement in the field of home audio, as set forth below.

104. Notably, the District Court of Delaware held that the claimed inventions of the ’014 Patent are “patent-eligible subject matter under § 101.” *See* Ex. 51 at p. 13. In particular, the district court recognized that the claimed inventions of the ’014 Patent “represent[] a substantial improvement over the existing technology” that “provides for capabilities far beyond what a traditional hardwired system offers.” *Id.* at p. 12.

105. The district court also recognized that the ’014 Patent’s solutions cannot be performed solely by a human. *See, e.g.*, *id.* at p. 11 (“Defendants do not explain how a human could manually accomplish this feat. Nor could they.”). Indeed, the ’014 Patent’s claimed solutions are not merely drawn to longstanding human activities at least because they address problems rooted in multi-zone audio systems. *See, e.g.*, *id.* at p. 12 (“This is not simply a ‘more efficient’ method of doing something already done by humans.”).

106. Moreover, the innovative and unconventional nature of the ’014 Patent was confirmed by the validity findings in the D&M Litigation (*see* Ex. 50) and the ’014 Patent reexamination proceeding (*see* Ex. 108).

The Inventions Claimed in U.S. Patent No. 7,571,014 Provide Important Advantages to Multi-Room Audio Systems

107. The group volume control technology of the ’014 Patent provides significant advantages that are important to multi-room audio systems. The advantages of Sonos’s group volume control technology are reflected in the recognition and praise it has received from the press. For example, shortly after Sonos launched its first commercial product in 2005, *PC Magazine* exclaimed: “[Sonos] is the first digital audio hub we can recommend without reservation …. Once you’re back to using the master volume control, the volume rises or falls

relative to each room's existing setting. These are the brilliant touches …." *See* Ex. 8. As another example, in 2005, *Playlist* lauded Sonos's "Controller" for its "stand[] out" interface that enables dynamic grouping of Sonos players and volume control. *See* Ex. 52. Likewise, in 2008, *Gizmodo* praised Sonos for the ability to "[c]hange the volume in a single room, or in all your rooms at once, all from the Sonos Controller." *See* Ex. 53. A few years later, in 2012, *Pocket-lint* touted Sonos's patented group volume technology as "simple but clever." *See* Ex. 54.

108. Recognizing the advantages of Sonos's patented group volume control technology, competitors in the industry, including Google, have incorporated Sonos's technology into their products and marketed to their customers the features that the technology enables. For example, Google's website included a webpage entitled "How to change the volume of an audio group," which touts the ability "[t]o adjust the **volume of all speakers in a group**" and "[t]o adjust a **single speaker**'**s volume** when it's part of a group" in a Google Wireless Audio System. *See* Ex. 55 (emphasis in original). As explained by Google, "[c]hanging the **group volume** . . . will change the volume of all speakers within the group." *Id*. (emphasis in original). In contrast, Google explained that "[c]hanging a **single speaker**'**s volume** when it's part of a group . . . will only change that individual speaker." *Id*. (emphasis in original). As another example, Google's website also includes a webpage entitled "Create and manage speaker groups," which touts the ability to "control group members volume" in a Google Wireless Audio System. *See* Ex. 29.

109. The media has also recognized the importance of Sonos's patented group volume control technology to Google and its customers. For example, in explaining that "[o]ne of the great advantages of having several Google Home speakers is the ability to play the same music throughout your house," the *Verge* also touted Google's group and individual volume features. *See* Ex 56.

Specifically, the *Verge* explained that you can control group volume if you "go to your Home app and tap on the name of your group," and that "[i]f you want to raise or lower the volume on a specific speaker in the group, just tap on the icon for that speaker on the main screen on the Home app." *Id*.

U.S. Patent No. 8,588,949

110. Sonos is the owner of U.S. Patent No. 8,588,949 (the "'949 Patent"), entitled "Method and Apparatus for Adjusting Volume Levels in a Multi-Zone System," which was duly and legally issued by the USPTO on November 19, 2013. A Reexamination Certificate for the '949 Patent was duly and legally issued by the USPTO on November 5, 2015. A copy of the '949 Patent, including the Reexamination Certificate, is attached hereto as Exhibit 1.

111. The '949 Patent relates generally to devices, computer-readable media, and methods for controlling a plurality of playback devices on a local area network.

112. The '949 Patent recognized problems with conventional multi-zone audio systems. For instance, the '949 Patent recognized that "conventional multi-zone audio system[s]" were undesirably based on a "centralized" device that was "hard-wired" to "audio players" in different rooms with dedicated speaker wire. *See, e.g.*, '949 Patent at 1:41-47, 1:57-60. Moreover, because these "conventional multi-zone audio system[s]" were "either hard-wired or controlled by a pre-configured and pre-programmed controller," it was "difficult for [a conventional] system to accommodate the requirement of dynamically managing the ad hoc creation and deletion of groups," among other disadvantages of conventional multi-zone audio systems. *See, e.g., id.* at 1:57-2:12.

113. In this regard, the '949 Patent recognized "a need for dynamic control of [] audio players as a group" and a solution that allowed "audio players [to] be readily grouped" with "minimum manipulation." *See, e.g., id.* at 2:13-15. In particular, the '949 Patent recognized "a need for user interfaces that may be

readily utilized to group and control [] audio players." *See, e.g.*, *id.* at 1:15-18. The claimed inventions of the '949 Patent are directed to technology that provides a solution to such needs. *See, e.g.*, *id.* at 2:65-3:3.

The Inventions Claimed in U.S. Patent No. 8,588,949 Improved Technology & Were Not Well-Understood, Routine, or Conventional

114. Given the state of the art at the time of the inventions of the '949 Patent, including the deficiencies in "centralized," "hard-wired" multi-zone audio systems of the time, the inventive concepts of the '949 Patent cannot be considered to be conventional, well-understood, or routine. *See, e.g.*, '949 Patent at 1:26-2:12. The '949 Patent provides an unconventional solution to problems that arose in the context of "centralized," "hard-wired" multi-zone audio systems – namely, that such systems made it difficult (or impossible) to dynamically group audio players for synchronous playback and dynamically control such grouped audio players. *See, e.g.*, *id.* at 1:57-2:12.

115. At the core of the '949 Patent are aspects of Sonos's unconventional system architecture – a "controller" and a plurality of "independent playback devices" (*e.g.*, "zone players") communicating over a "local area network" (LAN). Further, unlike the "pre-configured and pre-programmed controller[s]" used to control conventional "centralized," "hard-wired" multi-zone audio systems, the '949 Patent's "controller" devices were unconventionally capable of controlling any "zone player" in the system from anywhere in a user's house or business via the LAN, such as by dynamically "grouping the zone players" and "control[ling] the volume of each of the zone players in a zone group individually or together." *See, e.g.*, '949 Patent at 6:43-60.

116. In this respect, it was not well-understood, routine, or conventional at the time of the inventions of the '949 Patent to have a "controller" configured to (i) provide a user interface for a "player group" that includes a plurality of "players," each being an "independent playback device," and (ii) accept an input

to facilitate formation of the "player group" for "synchronized playback of a multimedia output from the same multimedia source." *See, e.g.*, '949 Patent at Claims 1, 8, 15; *see also, e.g.*, Ex. 8 (*2005 PC Mag:* "[Sonos's ZonePlayers] can play the same music throughout the house, perfectly synchronized. Even though that may seem drop-dead simple, other hubs don't do it. And you can join multiple rooms to play the same music . . . on the fly.").

117. Furthermore, it was not well-understood, routine, or conventional at the time of the inventions of the '949 Patent to have a "controller" configured to (i) accept, for any individual "player" in a "player group," a player-specific input to adjust the volume of that individual "player," where the player-specific input causes that individual "player" to adjust its volume and (ii) accept a "group-level" input to adjust a volume associated with the "player group," where the player-specific input causes each of the "players" in the "player group" to adjust its respective volume. *See, e.g.*, '949 Patent at Claims 1, 8, 15; *see also, e.g.*, Ex. 8 (*2005 PC Mag:* "Press the volume-down button, then slide the scroll wheel to select each room and set the volume for it. Once you're back to using the master volume control, the volume rises or falls relative to each room's existing setting. These are [] brilliant touches ….").

118. These are just exemplary reasons why the inventions claimed in the '949 Patent were not well-understood, routine, or conventional at the time of their invention.

119. The unconventional nature of the '949 Patent has also been confirmed by wide-spread industry praise for the patented technology of the '949 Patent as an advancement in the field of home audio, as set forth below.

120. Notably, the District Court of Delaware held that the claimed inventions of the '949 Patent are "patent-eligible subject matter under § 101." *See* Ex. 51 at p. 13. In particular, the district court recognized that the claimed inventions of the '949 Patent "represent[] a substantial improvement over the

existing technology" that "provides for capabilities far beyond what a traditional hardwired system offers." *Id.* at p. 12.

121. The district court also recognized that the '949 Patent's solutions cannot be performed solely by a human. *See, e.g.*, *id.* at pp. 11-12 ("Defendants' arguments that a human could perform the actions the [controller] device is said to perform is at best illogical."). Indeed, the '949 Patent's claimed solutions are not merely drawn to longstanding human activities at least because they address problems rooted in multi-zone audio systems. *See, e.g.*, *id.* at p. 12 ("This is not simply a 'more efficient' method of doing something already done by humans.").

122. Moreover, the innovative and unconventional nature of the '949 Patent was confirmed by the validity findings in the D&M Litigation (*see* Ex. 50) and the '949 Patent reexamination proceeding (*see* Ex. 1).

The Inventions Claimed in U.S. Patent No. 8,588,949 Provide Important Advantages to Wireless Audio Systems

123. The group volume control technology of the '949 Patent provides significant advantages that are important to wireless audio systems. The advantages of Sonos's group volume control technology are reflected in the recognition and praise it has received from the press. For example, shortly after Sonos launched its first commercial product in 2005, *PC Magazine* exclaimed: "[Sonos] is the first digital audio hub we can recommend without reservation . . . . Once you're back to using the master volume control, the volume rises or falls relative to each room's existing setting. These are the brilliant touches . . . ." *See* Ex. 8. As another example, in 2005, *Playlist* lauded Sonos's "Controller" for its "stand[] out" interface that enables dynamic grouping of Sonos players and volume control. *See* Ex. 52. Likewise, in 2008, *Gizmodo* praised Sonos for the ability to "[c]hange the volume in a single room, or in all your rooms at once, all from the Sonos Controller." *See* Ex. 53. A few years later, in 2012, *Pocket-lint*

touted Sonos's patented group volume technology as "simple but clever." *See* Ex. 54.

124. Recognizing the advantages of Sonos's patented group volume control technology, competitors in the industry, including Google, have incorporated Sonos's technology into their products and marketed to their customers the features that the technology enables. For example, Google's website included a webpage entitled "How to change the volume of an audio group," which touts the ability "[t]o adjust the volume of **all speakers in a group**" and "[t]o adjust a **single speaker's volume** when it's part of a group" in a Google Wireless Audio System. *See* Ex. 55 (emphasis in original). As explained by Google, "[c]hanging the **group volume** . . . will change the volume of all speakers within the group." *Id*. (emphasis in original). In contrast, Google explained that "[c]hanging a **single speaker's volume** when it's part of a group . . . will only change that individual speaker." *Id*. (emphasis in original). As another example, Google's website also includes a webpage entitled "Create and manage speaker groups," which touts the ability to "control group members volume" in a Google Wireless Audio System. *See* Ex. 29.

125. The media has also recognized the importance of Sonos's patented group volume control technology to Google and its customers. For example, in explaining that "[o]ne of the great advantages of having several Google Home speakers is the ability to play the same music throughout your house," the *Verge* also touted Google's group and individual volume features. *See* Ex 56. Specifically, the *Verge* explained that you can control group volume if you "go to your Home app and tap on the name of your group," and that "[i]f you want to raise or lower the volume on a specific speaker in the group, just tap on the icon for that speaker on the main screen on the Home app." *Id*.

U.S. Patent No. 9,195,258

126. Sonos is the owner U.S. Patent No. 9,195,258 (the "'258 Patent"), entitled "System and Method for Synchronizing Operations Among a Plurality of Independently Clocked Digital Data Processing Devices," which was duly and legally issued by the USPTO on November 24, 2015. A copy of the '258 Patent is attached hereto as Exhibit 2.

127. The '258 Patent relates generally to devices, systems, and methods for synchronizing audio playback among a group of "zone players."

128. As discussed above, Sonos recognized problems with conventional multi-zone audio systems and introduced a paradigm-shifting system architecture comprising "zone players" that communicated over a data network. The unconventional nature of Sonos's "zone players" introduced additional technological challenges to Sonos's system. *See, e.g.*, '258 Patent at 1:55-2:36.

129. For instance, the '258 Patent recognized the technological challenge of "ensur[ing] that, if two or more audio playback devices are contemporaneously attempting to play back the same audio program, they do so simultaneously." '258 Patent at 2:17-36. In this respect, the '258 Patent recognized that "audio playback devices that are being developed have independent clocks, and, if they are not clocking at precisely the same rate, the audio playback provided by the various [playback] devices can get out of synchronization." *Id.* at 2:32-36. Moreover, the '258 Patent recognized that "differences in the audio playback devices' start times and/or playback speeds" "can arise . . . for a number of reasons, including delays in the transfer of audio information over the network," and that "[s]uch delays can differ as among the various audio playback devices for a variety of reasons, including where they are connected into the network, message traffic, and other reasons . . . ." *Id.* at 2:20-27. Consequently, the '258 Patent recognized that "[s]mall differences in the audio playback devices' start times and/or

playback speeds can be perceived by a listener as an echo effect, and larger differences can be very annoying." *Id.* at 2:20-22.

130. In this regard, the '258 Patent recognized a need for "a new and improved system and method for synchronizing operations among a number of digital data processing devices that are regulated by independent clocking devices." *See, e.g.*, '258 Patent at 2:40-43. The claimed inventions of the '258 Patent are directed to technology that provides a solution to such needs. *See, e.g.*, *id.*

The Inventions Claimed in U.S. Patent No. 9,195,258 Improved Technology & Were Not Well-Understood, Routine, or Conventional

131. Given the state of the art at the time of the inventions of the '258 Patent, including the deficiencies in centralized, hard-wired multi-zone audio systems of the time, the inventive concepts of the '258 Patent cannot be considered to be conventional, well-understood, or routine. *See, e.g.*, '258 Patent at 1:26-2:12. The '258 Patent provides an unconventional solution to problems that arose in Sonos's unconventional system architecture comprising "zone players" that communicated over a data network – namely, that such "zone players" have "independent clocks" which makes ensuring synchronized audio playback difficult. *See, e.g.*, *id.* at 2:17-36.

132. At the core of the '258 Patent are aspects of Sonos's unconventional system architecture – "zone players" and at least one "controller" communicating over a "local area network." Each "zone player" was unconventionally equipped with a data network interface and intelligence enabling the "zone player" to independently access and play back audio from a variety of network-accessible audio sources and dynamically enter a "group" with one or more other "zone players" for synchronized audio playback based on an instruction from a "controller." *See, e.g.*, '258 Patent at FIG. 1, 3:50-61, 4:22-50, 5:10-6:64, Claims 1, 11, 17. While "grouped," the "zone players" were unconventionally capable of

sharing particular information over a data network to facilitate "reproduc[ing] audio information synchronously" despite the fact that the "zone players operate with independent clocks" and exchange packets over a data network with "differing delays." '258 Patent at 31:34-41.

133. In this respect, it was not well-understood, routine, or conventional at the time of the invention of the '258 Patent to have a "zone player" configured to interface with a LAN and receive from a "controller" over the LAN a direction for the "zone player" to enter into a synchrony group with at least one other "zone player." *See, e.g.*, '258 Patent at Claims 1, 11, 17; *see also, e.g.*, Ex. 8 (*2005 PC Mag:* "[Sonos's ZonePlayers] can play the same music throughout the house, perfectly synchronized. Even though that may seem drop-dead simple, other hubs don't do it. And you can join multiple rooms to play the same music . . . on the fly.").

134. Moreover, it was not well-understood, routine, or conventional at the time of the inventions of the '258 Patent to have a "zone player" configured to enter into a synchrony group with another "zone player" in which the "zone players" are configured to playback audio in synchrony based at least on (i) audio content, (ii) playback timing information associated with the audio content, and (iii) clock time information for one of the "zone players." *See, e.g.*, '258 Patent at Claims 1, 11, 17; *see also, e.g.*, Ex. 6 (*2013 NBC News*: "[Sonos] revolutionized the home audio world a decade ago . . . . If you wanted the same song in every room, no problem, the tracks would be perfectly in sync . . . . At the time, this was mind blowing. Never before could you get music in every room without drilling a bunch of holes for wires . . . .").

135. These are just exemplary reasons why the inventions claimed in the '258 Patent were not well-understood, routine, or conventional at the time of their invention.

136. The unconventional nature of the '258 Patent has also been confirmed by wide-spread industry praise for the patented technology of the '258 Patent as an advancement in the field of home audio, as set forth below.

137. Notably, the Patent Trial and Appeal Board recently confirmed that the '258 Patent is directed not just to unconventional implementations but to truly innovative audio technology. In this regard, the PTAB specifically found that inventions claimed in Sonos's Patent No. 9,213,357 – which cover similar subject matter as the inventions claimed in the '258 Patent – would not have been obvious at the time of their invention. *See* Ex. 57 at pp. 6-7.

138. Moreover, the innovative and unconventional nature of the '258 Patent was confirmed by the validity findings in the D&M Litigation. *See* Ex. 50.

The Inventions Claimed in U.S. Patent No. 9,195,258 Provide Important Advantages to Wireless Audio Systems

139. The grouping and synchronization technology of the '258 Patent provides significant advantages that are important to wireless audio systems. The advantages of Sonos's patented grouping and synchronization technology are reflected in the recognition and praise it has received from the press. For example, in 2005, shortly after Sonos released its first commercial products, *PC Magazine* touted the Sonos system for its ability to "play the same music throughout the house, perfectly synchronized." *See* Ex. 8. Similarly, in 2005, *The Wall Street Journal* praised Sonos's system for the ability to "play . . . the same songs, in each room simultaneously." *See* Ex. 58. As another example, in 2013, *Macworld* exclaimed: "Sonos is the gold standard when it comes to multi-room audio . . . you can drive the system from any computer or handheld device, playing music in sync throughout the house . . . ." *See* Ex. 59. Likewise, in 2013, *NBC News* praised Sonos's patented synchronization technology as "mind blowing." *See* Ex. 6 ("If you're not familiar with Sonos, this company revolutionized the home audio world a decade ago when it launched the first

(rather expensive) Sonos kits . . . . If you wanted the same song in every room, no problem, the tracks would be perfectly in sync . . . . At the time, this was mind blowing. Never before could you get music in every room without drilling a bunch of holes for wires . . . .").

140. Recognizing the advantages of Sonos's patented grouping and synchronization technology, competitors in the industry, including Google, have incorporated Sonos's patented technology into their products and marketed the features that the technology enables to their customers. For example, as set forth above, when Google updated its first wireless audio product – the Chromecast Audio – to include multi-room audio functionality, Google proclaimed that "[n]ow you can easily fill every room in your home—bedroom, kitchen, living room, or wherever you have a Chromecast Audio connected—with synchronous music. Multi-room lets you group Chromecast Audio devices together so you can listen to the same song on multiple speakers." *See* Ex. 20. And when Google later added multi-room audio to its original Chromecast for video, Google recognized the customer demand for Sonos's synchronization: "We heard your feedback, and the Chromecast team is excited to you [*sic*] bring Multi-room audio support for Chromecast devices!" Ex. 60.

141. As another example, in advertising the "Multi-room audio" capability of its wireless audio products on its website, Google touts that you can "[g]roup any combination of Google Home, Chromecast Audio, or speakers with Chromecast together for synchronous music throughout the home." *See*, *e.g.*, Ex. 61. Likewise, Google's website includes a webpage entitled "Create and manage speaker groups," which promotes grouping and synchronized audio playback in the very first sentence: "Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home." *See*, *e.g.*, Ex. 29.

142. The media has also recognized the importance of Sonos's patented grouping and synchronization technology to Google and its customers. For instance, *Variety* called Google's 2015 multi-room software update for Chromecast Audio "a major feature update" that allows "[c]onsumers . . . to group multiple Chromecast audio adapters to stream their favorite music simultaneously in more than one room . . . ." Ex. 21. As another example, when Google released the Google Home in 2016, *The Verge* recognized its ability to play audio in synchrony with other Google devices as an important feature that provided Google with an advantage over Amazon: "You can also group multiple Home units together and play music though all of them simultaneously, similar to how Sonos works. Amazon doesn't yet provide this feature with the Echo." Ex. 24. Notably, however, Amazon added multi-room to its own products shortly thereafter in 2017. *See* Ex. 86 (2017 *Amazon Press Release*: "New multi-room music feature lets you group multiple Amazon Echo devices for synchronized music streaming in every room.").

U.S. Patent No. 9,219,959

143. Sonos is the owner of U.S. Patent No. 9,219,959, entitled "Multi Channel Pairing in a Media System," which was duly and legally issued by the USPTO on December 22, 2015. A Reexamination Certificate for the '959 Patent was duly and legally issued by the USPTO on April 5, 2017. A copy of the '959 Patent, including the Reexamination Certificate, is attached hereto as Exhibit 3.

144. The '959 Patent relates generally to devices and methods for providing audio in a multi-channel listening environment.

145. As with other of the patents-in-suit, the '959 Patent recognized problems with conventional multi-zone audio systems. For instance, the '959 Patent recognized that conventional multi-zone audio systems were based on a centralized device hard-wired to "individual, discrete speakers" in different rooms that required "physically connecting and re-connecting speaker wire, for example,

to individual, discrete speakers to create different configurations." *See, e.g.*, '959 Patent at 6:54-58. Because these conventional multi-zone audio systems were hard-wired to "individual, discrete speakers," it was difficult (if not impossible) to "group, consolidate, and pair" the speakers into different "desired configurations" without "connecting and re-connecting speaker wire." *See, e.g.*, *id*.

146. Thus, the '959 Patent recognized a need for technology that could "provide a more flexible and dynamic platform through which sound reproduction can be offered to the end-user." '959 Patent at 6:58-61. The claimed inventions of the '959 Patent are directed to technology that provides a solution to such needs, thereby providing technology that helps "to achieve or enhance a multi-channel listening environment." *Id*. at 2:17-19.

The Inventions Claimed in U.S. Patent No. 9,219,959 Improved Technology & Were Not Well-Understood, Routine, or Conventional

147. Given the state of the art at the time of the inventions of the '959 Patent, including the deficiencies in centralized, hard-wired multi-zone audio systems of the time that required "physically connecting and re-connecting speaker wire . . . to create different configurations," the inventive concepts of the '959 Patent cannot be considered to be conventional, well-understood, or routine. *See, e.g.*, '959 Patent at 6:54-58. The '959 Patent provides an unconventional solution to problems that arose in the context of centralized, hard-wired multi-zone audio systems – namely, that the technology of such systems made it difficult (if not impossible) to "group, consolidate, and pair" "individual, discrete speakers" into different "desired configurations." *See, e.g.*, *id*. In this respect, unlike conventional hard-wired multi-zone audio systems, the '959 Patent provided unconventional technology including a "controller" with a "control interface" through which "actions of grouping, consolidation, and pairing [were] performed," and a "playback device" with processing intelligence capable of

being dynamically "pair[ed]" with another playback device to simulate "a multi-channel listening environment." *See e.g., id.* at 2:16-19, 6:54-58.

148. In this respect, it was not well-understood, routine, or conventional at the time of the invention of the '959 Patent to have a "playback device" comprising a network interface and configured to operate in at least both a first and second "type of pairing." *See, e.g.,* '959 Patent at Claims 4-7, 9-11, 17-20; *see also, e.g., id.* at 6:54-58.

149. Moreover, it was not well-understood, routine, or conventional at the time of the invention of the '959 Patent to have a "playback device" configured to (i) process audio data before the "playback device" outputs audio, (ii) determine that a type of pairing of the "playback device" comprises one of at least a first type of pairing or a second type of pairing, (iii) perform a first equalization of the audio data before outputting audio based on the audio data when the type of pairing is determined to comprise the first type of pairing, and (iv) perform a second equalization of the audio data before outputting audio when the type of pairing is determined to comprise the second type of pairing. *See, e.g.,* '959 Patent at Claims 4-7, 9-11, 17-20; *see also, e.g., id.* at 6:54-58. It was also not well-understood, routine, or conventional at the time of the invention of the '959 Patent to have a "playback device" configured to perform the aforementioned functions as well as being configured to receive an instruction from a "controller" over a network for the "playback device" to "pair" with one or more other "playback devices." *See, e.g., id.* at Claim 10; *see also, e.g., id.* at 6:54-58.

150. These are just exemplary reasons why the inventions claimed in the '959 Patent were not well-understood, routine, or conventional at the time of their invention.

151. The unconventional nature of the '959 Patent has also been confirmed by wide-spread industry praise for the patented technology of the '959 Patent as an advancement in the field of home audio, as set forth below.

152. Notably, the District Court of Delaware held that the claimed inventions of the '959 Patent are "patent-eligible subject matter under § 101." Ex. 51 at p. 16. In particular, the district court recognized that the claimed inventions of the '959 Patent represent a "substantial improvement" over the existing technology. *Id*. at p. 15.

153. The district court also recognized that the '959 Patent's solutions cannot be performed solely by a human. *See, e.g., id*. at p. 15 ("In order to perform this method manually . . . a person would have to manually rewire the devices each time a new selection is made for which devices are to output which channels."). Indeed, at least because the '959 Patent's claimed solutions address problems rooted in multi-zone audio systems and facilitate a "pairing" process with functions not previously performed by humans, these solutions are not merely drawn to longstanding human activities. *See, e.g., id*. at p. 15 ("This simply is not the kind of method that could be performed manually and, even if it were, automating the method as claimed represents a substantial improvement to the functionality of a specific device.").

154. Moreover, the innovative and unconventional nature of the '959 Patent was confirmed by the validity findings in the '959 Patent reexamination proceeding. *See* Ex. 3.

The Inventions Claimed in U.S. Patent No. 9,219,959 Provide Important Advantages to Wireless Audio Systems

155. The multi-channel pairing technology of the '959 Patent provides significant advantages that are important to wireless audio systems. The advantages of Sonos's multi-channel pairing technology are reflected in the recognition and praise it has received from the press. For example, in 2010, around the time that Sonos released its multi-channel pairing technology, *SlashGear* praised Sonos's technology as "a slick way for users . . . to combine two speakers when they want better sound." *See* Ex. 62. Similarly, in 2015,

Trusted Reviews described Sonos's multi-channel pairing technology as "[o]ne particularly nifty feature," and explained that it allows you to "[p]air up multiple speakers for better sound." *See* Ex. 63; *see also* Ex. 64 (2014 Consumer Reports: praising Sonos's multi-channel pairing technology as providing "a richer, more detailed sound with wider soundstage."); Ex. 65 (2014 Businessweek: recognizing Sonos's pairing technology as appealing to the "audiophile"); Ex. 66 (2013 What Hi-Fi: praising Sonos's pairing technology because "performance is bolstered significantly. Bass is even more solid, instrument separation improves, smaller details are picked up with more confidence and sound can go noticeably louder without distortion.").

156. Recognizing the advantages of Sonos's patented multi-channel pairing technology, competitors in the industry, including Google, have incorporated Sonos's technology into their products and marketed the features that the technology enables to their customers. For example, to market the Google Home Max on its website, Google includes a product webpage touting that you can "[w]irelessly pair two for room-filling stereo separation" for "[a]n even wider stereo image." Ex. 67. To illustrate this, Google provides the following image:

157. *Id*. Likewise, Google's Home Max product webpage also notes the "[w]ireless stereo pairing" functionality in the "Tech Specs" section. Ex. 68.

158. As another example, Google's website included a webpage entitled "Pair Google Home Max speakers," which proclaims that "[y]ou can pair two Google Home Max speakers (devices) for stereo sound and an immersive experience for music and casting," and explains how to "[p]air the speakers" and "[c]ontrol the speaker pair." Ex. 69.

159. And yet further, Google's press release for the launch of the Google Home Max in 2017 announced that "[y]ou can even wirelessly pair two Maxes together for stereo sound." Ex. 70.

160. The media has also recognized the importance of Sonos's patented multi-channel pairing technology to Google and its customers. For instance, when Google released the Home Max in 2017, *Engadget* cited the Home Max's stereo pairing capability in comparing it to Sonos's competing speakers and observed that "pairing two Home Max speakers in stereo . . . greatly extend[s] the soundstage." Ex. 71. *Engadget* also observed that "[t]he Home Max provides a stellar music experience, particularly in a stereo pair." *Id*. Similarly, *Digital Trends* observed that the Home Max is "impressive when you pair one Max with another for stereo audio." Ex. 72; *see also, e.g.*, Ex. 73 (2017 *The Verge*: "You can buy two [Google Home Max speakers] and set them up as a pair.").

161. In the same vein, when Google recently announced that it will be upgrading its Google Home and Home Mini to support stereo pairing, *9to5Google* recognized that "Google is expanding stereo speaker pairing to the original Google Home and Google Home Mini" and called stereo pairing "[o]ne of the best features." Ex. 74. Likewise, in response to Google's recent announcement, *Digital Trends* published an article entitled "Finally, stereo speaker pairing comes to the Google Home and Home Mini," which explained that stereo pairing is part of "[t]he beauty of having Google smart home devices." Ex. 75.

U.S. Patent No. 10,031,715

162. Sonos is the owner of U.S. Patent No. 10,031,715, entitled "Method and Apparatus for Dynamic Master Device Switching in a Synchrony Group," which was duly and legally issued by the USPTO on July 24, 2018. A copy of the '715 Patent is attached hereto as Exhibit 109.

163. The '715 Patent is related to the '258 Patent and shares a common specification and ultimate priority claim.

164. The '715 Patent is directed to devices, methods, and computer-readable media for dynamically delegating a "master" role within a synchrony group of "zone players."

165. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 126-30 of this Second Amended Complaint as if fully set forth herein.

The Inventions Claimed in U.S. Patent No. 10,031,715 Improved Technology & Were Not Well-Understood, Routine, or Conventional

166. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 131-38 of this Second Amended Complaint as if fully set forth herein.

167. Like the inventions claimed in the '258 Patent, the inventions claimed in the '715 Patent improved technology and were not well-understood, routine, or conventional. In this respect, the '715 Patent provides an unconventional solution to problems that arose in Sonos's unconventional system architecture comprising "zone players" that communicated over a data network – namely, that operating conditions affecting "zone players" in a "synchrony group" can inhibit performance of certain roles within the "synchrony group" and/or synchronous playback by the group. *See, e.g.*, '715 Patent, 8:38-52, 10:60-11:4, 13:32-36, 37:12-18.

168. At the core of the '715 Patent are unconventional system components – "zone players" and a "controller device" that operate on a data network. Each "zone player" was unconventionally equipped with intelligence enabling it to perform a "master device role" for the "synchrony group." *See, e.g.*, '715 Patent, 6:58-7:3, 8:2-26, 8:31-38, Claims 1, 7, 13. While performing the "master device role," the "zone player" was unconventionally capable of dynamically delegating the "master device role" to another "zone player" in the "synchrony group." *See, e.g.*, '715 Patent, 8:38-9:4, 10:60-11:4, 13:22-36, 16:3-18:15, Claims 1, 7, 13.

169. Indeed, it was not well-understood, routine, or conventional at the time of the inventions of the '715 Patent to have a "zone player" programmed to perform a "master device role" for a "synchrony group" in which the "zone player" was configured to control synchronous playback of audio information by the group responsive to playback commands received from a "controller device." *See, e.g.*, '715 Patent, Claims 1, 7, 13.

170. Moreover, it was not well-understood, routine, or conventional at the time of the inventions of the '715 Patent to have a "zone player" programmed such that, while performing the "master device role," it would evaluate one or more "operational performance metrics" as a basis to delegate the "master device role" to another "zone player" in the "synchrony group" and thereafter, transition to performing a different role in the "synchrony group." *See, e.g.*, '715 Patent, Claims 1, 7, 13.

171. These are just exemplary reasons why the inventions claimed in the '715 Patent were not well-understood, routine, or conventional at the time of their invention.

The Inventions Claimed in U.S. Patent No. 10,031,715 Provide Important Advantages to Wireless Audio Systems

172. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 139-42 of this Second Amended Complaint as if fully set forth herein.

173. Moreover, the dynamic master-delegation technology of the '715 Patent provides advantages that are important to wireless audio systems. In fact, recognizing the advantages of Sonos's patented dynamic master-delegation technology, competitors in the industry, including Google, have incorporated Sonos's patented technology into their products and touted the benefits that the technology enables. For example, while publicly testifying, Google's engineers touted the "adaptive," "automatic" ("without user intervention") and "resilient" characteristics of Google's accused "leader election" feature that infringes the '715 Patent. *See*, *e.g.*, Ex. 122, 1247:2-7, 1251:3-1252:9; *id.*, 1300:16-1301:4.

U.S. Patent No. 10,209,953

174. Sonos is the owner of U.S. Patent No. 10,209,953, entitled "Playback Device," which was duly and legally issued by the USPTO on February 19, 2019. A copy of the '953 Patent is attached hereto as Exhibit 4.

175. The '953 Patent is related to the '258 Patent and '715 Patent and shares a common specification and ultimate priority claim.

176. The '953 Patent is directed to devices, methods, and computer-readable media for synchronizing audio playback.

177. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 126-30 of this Second Amended Complaint as if fully set forth herein.

The Inventions Claimed in U.S. Patent No. 10,209,953 Improved Technology & Were Not Well-Understood, Routine, or Conventional

178. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 131-38 of this Second Amended Complaint as if fully set forth herein.

179. Like the inventions claimed in the '258 Patent, the inventions claimed in the '953 Patent improved technology and were not well-understood, routine, or conventional.

180. Indeed, it was not well-understood, routine, or conventional at the time of the invention of the '953 Patent to have a "zone player" configured to receive a request for the "zone player" to enter into a synchrony group with at least one other "zone player" and in response to receiving such a request, enter into the synchrony group in which the "zone player" is selected to begin operating as a "slave" of the synchrony group. *See, e.g.*, '953 Patent at Claims 1, 7, 25; *see also, e.g.*, Ex. 8 (*2005 PC Mag:* "[Sonos's ZonePlayers] can play the same music throughout the house, perfectly synchronized. Even though that may seem drop-dead simple, other hubs don't do it. And you can join multiple rooms to play the same music . . . on the fly.").

181. Moreover, it was not well-understood, routine, or conventional at the time of the invention of the '953 Patent to have a "zone player" that, after beginning to operate as a "slave" of a synchrony group, functions to (i) receive, from another "zone player" operating as a "master" of the synchrony group over a local area network (LAN), clock timing information and (ii) based on the received clock timing information, determine a differential between the clock time of the "zone player" and the clock time of the "master" "zone player." *See, e.g.*, '953 Patent at Claims 1, 7, 25; *see also, e.g.*, Ex. 6 (*2013 NBC News*: "[Sonos] revolutionized the home audio world a decade ago . . . . If you wanted the same song in every room, no problem, the tracks would be perfectly in sync . . . . At the

time, this was mind blowing. Never before could you get music in every room without drilling a bunch of holes for wires . . . .").

182. Further yet, it was not well-understood, routine, or conventional at the time of the invention of the '953 Patent to have a "zone player" that, after beginning to operate as a "slave" of a synchrony group, functions to receive, from another "zone player" operating as a "master" of the synchrony group over a LAN, (a) audio information for an audio track and (b) playback timing information associated with the audio information for the audio track that comprises an indicator of a future time at which the "zone players" are to initiate synchronous playback of the audio information. *See, e.g.*, '953 Patent at Claims 1, 7, 25; *see also, e.g.*, Ex. 6. It was also not well-understood, routine, or conventional at the time of the invention of the '953 Patent to have a "zone player" that, after beginning to operate as a "slave" of a synchrony group, functions to perform the aforementioned operations as well as functions to (i) update the future time to account for a determine differential between the clock time of the "zone player" and the clock time of the "master" "zone player" and (ii) initiate synchronous playback of the received audio information with the "master" "zone player" when the clock time of the "zone player" reaches the updated future time. *See, e.g.*, '953 Patent at Claims 1, 7, 25; *see also, e.g.*, Ex. 6.

183. These are just exemplary reasons why the inventions claimed in the '953 Patent were not well-understood, routine, or conventional at the time of their invention.

184. As with the '258 Patent, the unconventional nature of the '953 Patent has also been confirmed by wide-spread industry praise for the patented technology of the '953 Patent as an advancement in the field of home audio.

The Inventions Claimed in U.S. Patent No. 10,209,953 Provide Important Advantages to Wireless Audio Systems

185. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 139-42 of this Second Amended Complaint as if fully set forth herein.

186. As with the '258 Patent, the synchronization technology of the '953 Patent provides significant advantages that are important to wireless audio systems, as reflected in the recognition and praise it has received from the press/media and competitors in the industry including Google.

U.S. Patent No. 10,439,896

187. Sonos is the owner of U.S. Patent No. 10,439,896, entitled "Playback Device Connection," which was duly and legally issued by the USPTO on October 8, 2019. A copy of the '896 Patent is attached hereto as Exhibit 5.

188. The '896 Patent relates generally to devices, methods, and computer-readable media for connecting a "playback device" to a secure wireless local area network (WLAN), thereby setting up the "playback device" for use in a networked audio system.

189. The '896 Patent recognized problems with conventional device-setup technology for connecting "consumer electronic devices" (*e.g.*, "home entertainment products") to a network. *See, e.g.*, '896 Patent at 1:37-67. For instance, the '896 Patent recognized that "[c]onsumer electronic devices that operate using wireless or wired Ethernet standards are often subject to the same complicated set-up process as a wireless computer network." *Id*. at 1:37-39.

190. Indeed, a conventional setup process typically required "the person who sets up the wireless network [to] have at least some knowledge about IP (Internet Protocol) networking and Ethernet (*e.g.*, 802.3, 802.11), such as addressing, security, broadcast, unicast, etc." *Id*. at 1:40-43. At the time of the inventions of the '896 Patent, typically only "IT professionals" possessed such

knowledge. *Id*. at 1:43-46. In this respect, to connect a computer to a wireless network, "the user [had] to know what type of network the computer [was] going to be connected to," which was a "difficult question [for] the average consumers" to answer. *Id*. at 1:57-63. Moreover, there were additional "questions or options related to [] security settings [] which evidently require[d] some good understanding about the network security over the wireless network." *Id*. at 1:63-67. Thus, the '896 Patent recognized that it was "impractical to require average consumers to have such knowledge to hook up consumer electronic devices, such as home entertainment products that use wireless/wired Ethernet connectivity." *Id*. at 1:46-49.

191. The '896 Patent also recognized that a device that has yet to be setup on a network has "limited networking capability" and is not addressable by other devices, which presents technical challenges as to how that device can receive information that facilitates the device's setup to operate on the network. *See, e.g.*, '896 Patent at 11:4-14.

192. Consequently, the '896 Patent recognized that there was "a clear need to create simple methods of setting up and maintaining a secure wireless/wired in-home network with minimum human interventions." *Id*. at 2:1-4. The claimed inventions of the '896 Patent are directed to technology that provides a solution to such needs.

The Inventions Claimed in U.S. Patent No. 10,439,896 Improved Technology & Were Not Well-Understood, Routine, or Conventional

193. Given the state of the art at the time of the inventions of the '896 Patent, including the deficiencies in conventional device-setup technology of the time, the inventive concepts of the '896 Patent cannot be considered to be conventional, well-understood, or routine. *See, e.g.*, '896 Patent at 1:37-2:4. The '896 Patent provides an unconventional solution to problems arising in the context of connecting "consumer electronic devices" (*e.g.*, "home entertainment

products") to a network – namely, that such devices, prior to being setup, had limited networking capabilities and were not network addressable by other devices and typically operated "using wireless or wired Ethernet standards [that were] often subject to the same complicated set-up process as a wireless computer network." *Id*. at 1:37-2:4, 11:4-14.

194. In this respect, the '896 Patent provided a technological solution that addressed the limited-networking-capability and addressability problems with existing setup technologies. *See, e.g.*, '896 Patent at 11:4-14:37, 15:31-17:38. Moreover, unlike conventional device-setup technology whose complexity made it "impractical" for "average consumers to . . . hook up consumer electronic devices" to a requisite data network, the '896 Patent provided a technological solution that made it easier for consumers to connect a consumer electronic device to a data network. *See, e.g.*, *id.* at 1:37-67.

195. In this regard, it was not well-understood, routine, or conventional at the time of the inventions of the '896 Patent to have a "computing device" comprising a graphical user interface (GUI) associated with an application for controlling one or more "playback devices" and that is configured to facilitate setting up a "playback device" to operate on a secure WLAN. *See, e.g.*, '896 Patent at Claims 1, 13, 20.

196. Moreover, it was not well-understood, routine, or conventional at the time of the inventions of the '896 Patent to have a "computing device" configured to (i) transmit a response to a first message that facilitates establishing with a "playback device" an "initial communication path" that does not traverse an access point defining a secure WLAN, (ii) transmit "network configuration parameters" for the secure WLAN to the "playback device" via the "initial communication path," and (iii) transition from communicating with the given "playback device" via the "initial communication path" to communicating with

the given "playback device" via the secure WLAN. *See, e.g.*, '896 Patent at Claims 1, 13, 20.

197. Additionally, it was not well-understood, routine, or conventional at the time of the inventions of the '896 Patent to have a "computing device" configured to perform the specific combination of (i) while operating on a secure WLAN defined by an access point, (a) receiving "user input indicating that a user wishes to set up a playback device" to operate on the secure WLAN and (b) receiving a first message indicating that a "given playback device is available for setup," (ii) transmitting a response to the first message that facilitates establishing with the given "playback device" an "initial communication path" that does not traverse the access point, (iii) transmitting, to the given "playback device" via the "initial communication path," at least a second message containing "network configuration parameters" for the secure WLAN, and (iv) after detecting an indication that the given "playback device" has successfully received the "network configuration parameters," transitioning from communicating with the given "playback device" via the "initial communication path" to communicating with the given "playback device" via the secure WLAN. *See, e.g.*, '896 Patent at Claims 1, 13, 20.

198. These are just exemplary reasons why the inventions claimed in the '896 Patent were not well-understood, routine, or conventional at the time of their invention.

199. The unconventional nature of the '896 Patent has also been confirmed by wide-spread industry praise for the patented technology of the '896 Patent as an advancement in the field of home audio, as set forth below.

200. Moreover, the '896 Patent's solutions are naturally rooted in consumer device-setup technology and cannot be performed solely by a human. Indeed, the '896 Patent's claimed solutions provide a device-setup process

comprising functions not previously performed by humans and therefore, are not merely drawn to longstanding human activities.

The Inventions Claimed in U.S. Patent No. 10,439,896 Provide Important Advantages to Wireless Audio Systems

201. The playback-device-setup technology of the '896 Patent provides significant advantages that are important to wireless audio systems. The advantages of Sonos's patented playback-device-setup technology are reflected in the recognition and praise it has received from the press. For example, in 2015, *Ars Technica* explained:

> There was no convoluted wireless setup, syncing issues, or complex software to decipher: I simply downloaded the Sonos app on the Google Play Store, pushed the sync button on the back of the speaker, and it did the rest. When you can describe the entire setup procedure in a single sentence, that's special.

Ex. 76.

202. Likewise, *Gizmodo* touted Sonos's patented playback-device-setup technology as "so easy that anybody can do it." Ex. 77. And *Consumer Reports* explained that Sonos's playback-device-setup technology is "pretty simple." Ex. 78.

203. Recognizing the advantages of Sonos's patented playback-device-setup technology, competitors in the industry, including Google, have incorporated Sonos's patented technology into their products and marketed the features that the technology enables to their customers. For example, to market its Google Audio Players on its website, Google includes a dedicated "Setup" tab that touts how "[g]etting set up is simple." *See, e.g.*, Ex. 79. As another example, Google's website includes a webpage entitled "Set up your Google Nest or Google Home speaker or display," which explains that "[t]he Google Home app

will walk you through the steps to set up your Google Nest or Google Home speaker or display." Ex. 80.

204. The media has also recognized the importance of Sonos's patented playback-device-setup technology to Google and its customers. For instance, *Android Central* published an article entitled "How to set up Google Home and other Google Assistant speakers," which touted Google's setup as a "simple process." Ex. 81. Similarly, *Tom's Guide* exclaimed that the Google Home Mini is a "cinch to set up" and further described the setup procedure as "pretty straightforward." Ex. 82; *see also, e.g.*, Ex. 83 (2019 CNET article explaining that "[i]t's easy to set up your Google Home . . . speaker for the first time").

U.S. Patent No. 11,080,001

205. Sonos is the owner of U.S. Patent No. 11,080,001, entitled "Concurrent Transmission and Playback of Audio Information," which was duly and legally issued by the USPTO on August 3, 2021. A copy of the '001 Patent is attached hereto as Exhibit 110.

206. The '001 Patent is related to the '258, '715, and '953 Patents and shares a common specification and ultimate priority claim.

207. The '001 Patent is directed to devices, methods, and computer-readable media for operating in a synchrony group according to particular master and/or slave modes.

208. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 126-30 of this Second Amended Complaint as if fully set forth herein.

The Inventions Claimed in U.S. Patent No. 11,080,001 Improved Technology & Were Not Well-Understood, Routine, or Conventional

209. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 131-38, 166-71, and 178-84 of this Second Amended Complaint as if fully set forth herein.

210. Like the inventions claimed in the '258, '715, and '953 Patents, the inventions claimed in the '001 Patent improved technology and were not well-understood, routine, or conventional. In this respect, the '001 Patent provides an unconventional solution to problems that arose in Sonos's unconventional system architecture comprising "zone players" that communicated over a data network – namely, that there were various responsibilities to be performed in a "synchrony group" of such "zone players." *See, e.g.*, '001 Patent, 6:58-7:3, 8:2-9:36.

211. As with the '258, '715, and '953 Patents, at the core of the '001 Patent are aspects of Sonos's unconventional system architecture – "zone players" and a "network device" (e.g., controller) that operate on a data network. Each "zone player" was unconventionally equipped with intelligence enabling it to operate in a "synchrony group" in either a "control-master mode" or "control-slave mode" and in either an "audio-master mode" or "audio-slave mode." *See, e.g.*, '001 Patent at 6:58-7:3, 8:2-9:36, Claims 1, 12, 23.

212. In this respect, it was not well-understood, routine, or conventional at the time of the inventions of the '001 Patent to have a "zone player" configured to interface with a data network and receive a request to engage in synchronous playback of audio content as part of a synchrony group. *See, e.g.*, '001 Patent at Claims 1, 12, 23.

213. Moreover, it was not well-understood, routine, or conventional at the time of the inventions of the '001 Patent to have a "zone player" configured to, after receiving a request to engage in synchronous playback of audio content as part of a synchrony group, operate in the synchrony group in accordance with a detected indication that the "zone player" is to operate in either a "control-master mode" or "control-slave mode" for the synchrony group and in either an "audio-master mode" or "audio-slave mode" for the synchrony group. *See, e.g.*, '001 Patent at Claims 1, 12, 23.

214. It was also not well-understood, routine, or conventional at the time of the inventions of the '001 Patent to have a "zone player" programmed such that, while operating in the "control-master mode," it functions to cause, via its network interface, at least one playback action to be applied in a synchrony group based on received control information for the synchrony group from a network device. *See, e.g.*, '001 Patent at Claims 1, 12, 23.

215. Additionally, it was not well-understood, routine, or conventional at the time of the inventions of the '001 Patent to have a "zone player" programmed such that, while operating in the "control-slave mode," it functions to perform one or more playback actions in accordance with received control information from another "zone player." *See, e.g.*, '001 Patent at Claims 1, 12, 23.

216. Furthermore, it was not well-understood, routine, or conventional at the time of the inventions of the '001 Patent to have a "zone player" programmed such that, while operating in the "audio-master mode," it functions to (i) obtain audio information representative of audio content, (ii) generate playback timing information indicative of at least one future time relative to a reference clock time that denotes a time at which the "zone player" and at least one other "zone player" are to engage in synchronous playback of a corresponding portion of the obtained audio information, and (iii) transmit the audio information and the playback timing information to the other "zone player." *See, e.g.*, '001 Patent at Claims 1, 12, 23.

217. Further still, it was not well-understood, routine, or conventional at the time of the inventions of the '001 Patent to have a "zone player" programmed such that, while operating in the "audio-slave mode," it functions to (i) receive audio information and associated playback timing information from another "zone player" and (ii) engage in synchronous playback of the received audio information with at least the other "zone player" based on the associated playback timing information. *See, e.g.*, '001 Patent at Claims 1, 12, 23.

218. These are just exemplary reasons why the inventions claimed in the ’001 Patent were not well-understood, routine, or conventional at the time of their invention.

The Inventions Claimed in U.S. Patent No. 11,080,001 Provide Important Advantages to Wireless Audio Systems

219. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 139-42 and 173 of this Second Amended Complaint as if fully set forth herein.

220. As with the ’258, ’715, and ’953 Patents, the synchrony-group operating-modes technology of the ’001 Patent provides advantages that are important to wireless audio systems. In fact, recognizing the advantages of Sonos’s patented synchrony-group operating-modes technology, competitors in the industry, including Google, have incorporated Sonos’s patented technology into their products.

U.S. Patent No. 10,966,025

221. Sonos is the owner of U.S. Patent No. 10,966,025, entitled “Playback Device Pairing,” which was duly and legally issued by the USPTO on March 30, 2021. A copy of the ’025 Patent is attached hereto as Exhibit 130.

222. The ’025 Patent is related to the ’959 Patent and shares a common specification and ultimate priority claim.

223. The ’025 Patent is directed to devices, methods, and computer-readable media for providing audio in a multi-channel listening environment.

224. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 143-146 of this Second Amended Complaint as if fully set forth herein.

The Inventions Claimed in U.S. Patent No. 10,966,025 Improved Technology & Were Not Well-Understood, Routine, or Conventional

225. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 147-154 of this Second Amended Complaint as if fully set forth herein.

226. Like the inventions claimed in the '959 Patent, the inventions claimed in the '025 Patent improved technology and were not well-understood, routine, or conventional.

227. In this respect, it was not well-understood, routine, or conventional at the time of the invention of the '025 Patent to have a "playback device" comprising a network interface and programmed to receive a signal from a controller over a network that comprises an instruction for the "playback device" to become "paired" with one or more other "playback devices." *See, e.g.*, '025 Patent at Claims 1, 16, 18; *see also, e.g.*, *id.* at 7:13-22.

228. Moreover, it was not well-understood, routine, or conventional at the time of the invention of the '025 Patent to have a "playback device" programmed to determine that either (a) it is not "paired" with one or more other "playback devices" or (b) it is "paired" with one or more other "playback devices" such that they have different playback roles. *See, e.g.*, '025 Patent at Claims 1, 16, 18; *see also, e.g.*, *id.* at 7:13-22.

229. Further yet, it was not well-understood, routine, or conventional at the time of the invention of the '025 Patent to have a "playback device" programmed to (a) configure itself to perform a first processing of audio data received over a network so as to output two-channel audio after the "playback device" has determined it is not "paired" with one or more other "playback devices" and (b) change its configuration by configuring itself to perform a second processing of the audio data so as to output one-channel audio after the

"playback device" has determined it is "paired" with one or more other "playback devices." *See, e.g.*, '025 Patent at Claims 1, 16, 18; *see also, e.g.*, *id.* at 7:13-22.

230. These are just exemplary reasons why the inventions claimed in the '025 Patent were not well-understood, routine, or conventional at the time of their invention.

The Inventions Claimed in U.S. Patent No. 10,966,025 Provide Important Advantages to Wireless Audio Systems

231. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 155-161 of this Second Amended Complaint as if fully set forth herein.

232. As with the '959 Patent, the multi-channel pairing technology of the '025 Patent provides significant advantages that are important to wireless audio systems, as reflected in the recognition and praise it has received from the press/media and competitors in the industry including Google.

U.S. Patent No. 10,541,883

233. Sonos is the owner of U.S. Patent No. 10,541,883, entitled "Playback Device Connection," which was duly and legally issued by the USPTO on January 21, 2020. A copy of the '883 Patent is attached hereto as Exhibit 131.

234. The '883 Patent is related to the '896 Patent and shares a common specification and ultimate priority claim.

235. The '883 Patent is directed to devices, methods, and computer-readable media for connecting a "playback device" to a secure wireless local area network (WLAN), thereby setting up the "playback device" for use in a networked audio system.

236. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 187-192 of this Second Amended Complaint as if fully set forth herein.

The Inventions Claimed in U.S. Patent No. 10,541,883 Improved Technology & Were Not Well-Understood, Routine, or Conventional

237. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 193-200 of this Second Amended Complaint as if fully set forth herein.

238. Like the inventions claimed in the '896 Patent, the inventions claimed in the '883 Patent improved technology and were not well-understood, routine, or conventional.

239. In this respect, it was not well-understood, routine, or conventional at the time of the invention of the '883 Patent to have a "playback device" comprising a network interface and configured to be set up to operate on a secure WLAN with the assistance of a "computing device" installed with an application for controlling the "playback device." *See, e.g.*, '883 Patent at Claims 1, 14, 20.

240. Moreover, it was not well-understood, routine, or conventional at the time of the invention of the '883 Patent to have a "playback device" configured to (i) receive a response to a first message that facilitates establishing with a "computing device" an "initial communication path" that does not traverse an access point defining a secure WLAN, (ii) receive "network configuration parameters" for the secure WLAN from the "computing device" via the "initial communication path," and (iii) transition from communicating with the "computing device" via the "initial communication path" to communicating with the "computing device" via the secure WLAN. *See, e.g.*, '883 Patent at Claims 1, 14, 20.

241. Additionally, it was not well-understood, routine, or conventional at the time of the invention of the '883 Patent to have a "playback device" configured to perform the specific combination of (i) detecting a triggering event that causes the "playback device" to enter a setup mode in which the "playback device" transmits at least a first message indicating that the "playback device" is

"available for setup," (ii) while in the setup mode, receiving a response to a first message that facilitates establishing with a "computing device" operating on a secure WLAN defined by an access point an "initial communication path" that does not traverse the access point, (iii) receiving at least a second message containing "network configuration parameters" for the secure WLAN from the "computing device" via the "initial communication path," (iv) using the "network configuration parameters" to connect to the secure WLAN, and (v) transitioning from communicating with the "computing device" via the "initial communication path" to communicating with the "computing device" via the secure WLAN. *See, e.g.*, '883 Patent at Claims 1, 14, 20.

242. These are just exemplary reasons why the inventions claimed in the '883 Patent were not well-understood, routine, or conventional at the time of their invention.

The Inventions Claimed in U.S. Patent No. 10,541,883 Provide Important Advantages to Wireless Audio Systems

243. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 201-204 of this Second Amended Complaint as if fully set forth herein.

244. As with the '896 Patent, the playback-device-setup technology of the '883 Patent provides significant advantages that are important to wireless audio systems, as reflected in the recognition and praise it has received from the press/media and competitors in the industry including Google.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 7,571,014

245. Sonos incorporates by reference and re-alleges paragraphs 85-109 of this Second Amended Complaint as if fully set forth herein.

246. Google and/or users of the Google Wireless Audio System have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '014 Patent, in

violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Google Wireless Audio System within the United States and/or importing the Google Wireless Audio System into the United States without authority or license.

247. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 25 of the '014 Patent in connection with the Google Wireless Audio System. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the Google Wireless Audio System that it obtains during discovery.

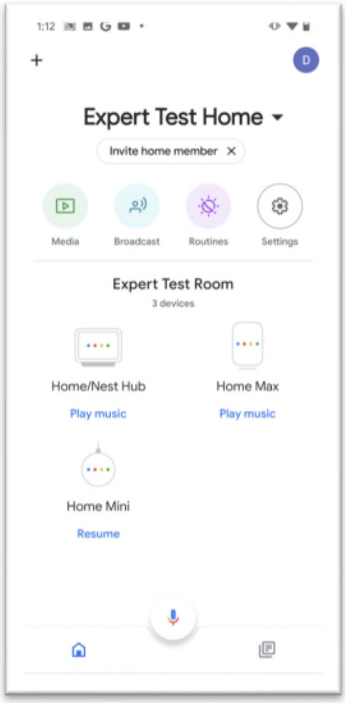
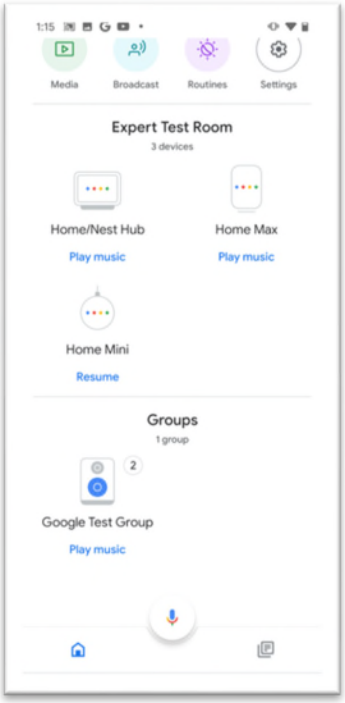
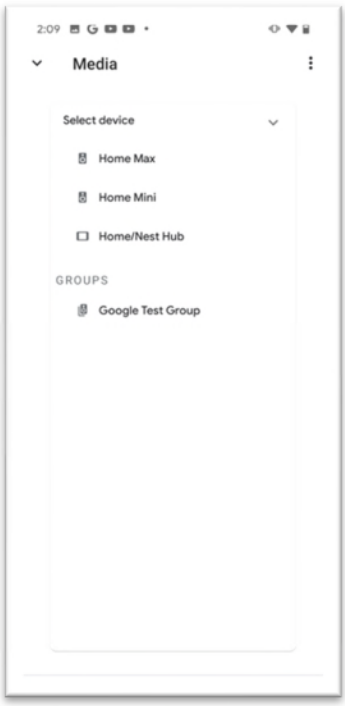
Claim 25	Google
[25.0] An apparatus for controlling a plurality of players, the apparatus comprising:	At least each smartphone, tablet, and computer installed with the Google Home app, the YouTube Music app, and/or the Google Play Music app (where a computing device installed with at least one of these apps is referred to herein as a "Chromecast-enabled computing device"[4]) comprises an "apparatus for controlling a plurality of players," as recited in claim 25. *See, e.g.*, Exs. 40-43, 87-92. At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest

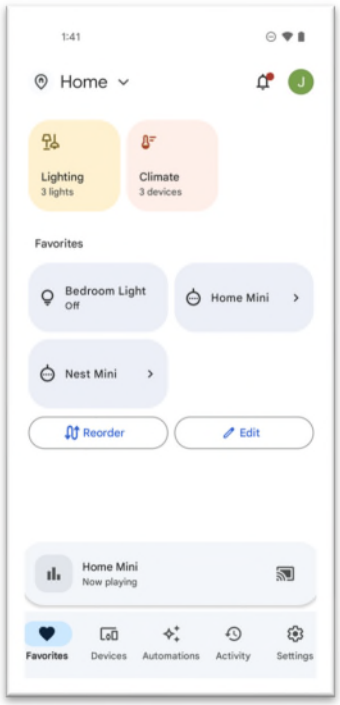
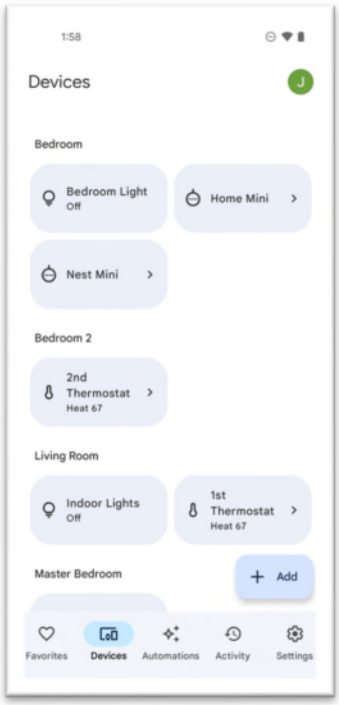
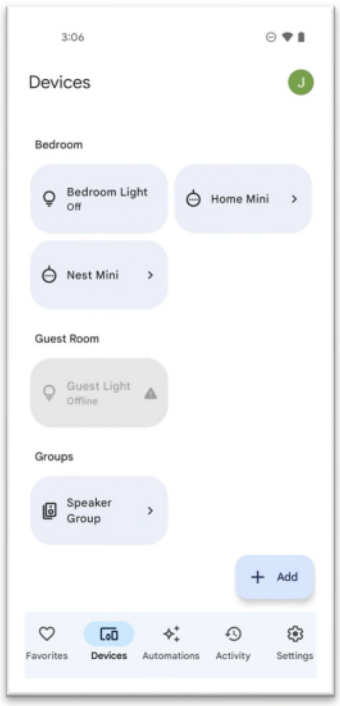
[4] Each of the Pixel 3, Pixel 3 XL, Pixel 3a, Pixel 3a XL, Pixel 4, Pixel 4 XL, Pixel 4a, Pixel 4a (5G), Pixel 5, Pixel 5a, Pixel 6, Pixel 6 Pro, Pixel 6a, Pixel 7, Pixel 7 Pro, Pixel 7a, Pixel Fold, Pixel 8, Pixel 8 Pro, Pixel 8a, Pixel 9, Pixel 9 Pro, Pixel 9 Pro XL, and Pixel 9 Pro Fold phones, the Pixel Slate and Pixel Tablet tablets, and the Pixelbook and Pixelbook Go laptops installed with an Android version of the Google Home app, the YouTube Music app, and/or the Google Play Music app is an example of a "Chromecast-enabled computing device." Likewise, each other smartphone, tablet, and computer installed with an Android or iOS version of the Google Home app, the YouTube Music app, and/or the Google Play Music app is an example of a "Chromecast-enabled computing device," including by way of example, Apple and Samsung phones and tablets.

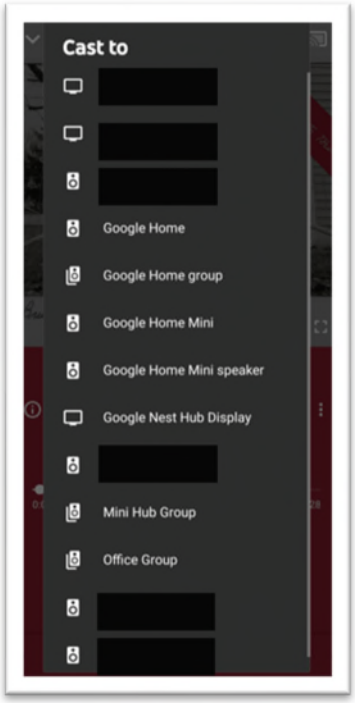
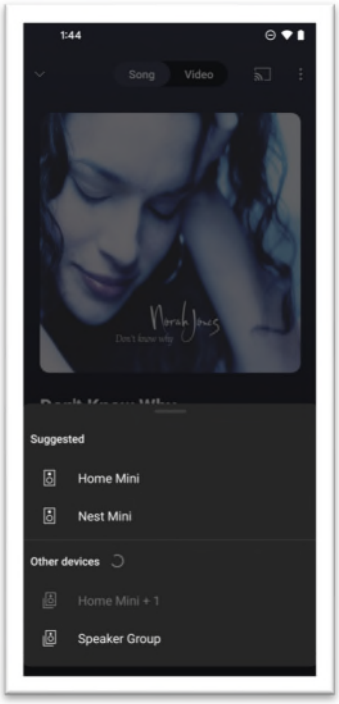
Claim 25	Google
	Hub, Nest Hub Max,5 Nest Audio, and Nest Wifi Point comprises a "player," as recited in claim 25.
[25.1] a screen;	Each Chromecast-enabled computing device and Hub Audio Player comprises a screen. *See, e.g.*, Exs. 40-43, 87-92
[25.2] a screen driver commanding the screen;	Each Chromecast-enabled computing device and Hub Audio Player comprises a screen driver commanding the screen. *See, e.g.*, Exs. 40-43, 87-92.
[25.3] an input interface;	Each Chromecast-enabled computing device and Hub Audio Player comprises an input interface, such as a touch screen, physical buttons, etc. *See, e.g.*, Exs. 40-43, 87-92.
[25.4] a network interface;	Each Chromecast-enabled computing device and Hub Audio Player comprises a network interface, such as a WiFi interface. *See, e.g.*, Exs. 40-43, 87-92.
[25.5] a memory for storing code for an application module;	Each Chromecast-enabled computing device and Hub Audio Player comprises a memory for storing code for an application module. *See, e.g.*, Exs. 34-43, 87-92.
[25.6] a processor coupled to the memory, the input interface, the screen driver and the network interface, the processor executing the code in the memory to cause the application module and the screen driver to perform operations of:	Each Chromecast-enabled computing device and Hub Audio Player comprises a processor coupled to the memory, the input interface, the screen driver and the network interface, the processor executing the code in the memory to cause the application module and the screen driver to perform the operations identified below. *See, e.g.*, Exs. 40-43, 87-92.
[25.7] displaying on a screen a first list showing at least available players;	Each Chromecast-enabled computing device and Hub Audio Player is programmed with the

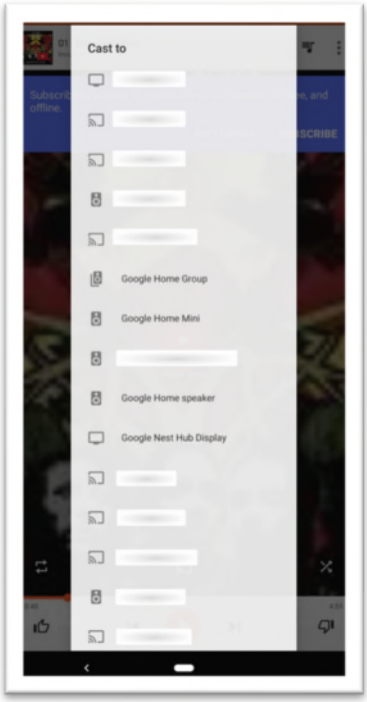
[5] In addition to being configured as a "player," as recited in claim 25, each Home Hub, Nest Hub, and Nest Hub Max (referred to herein as a "Hub Audio Player") is installed with Home/Nest Hub software such that the given Hub Audio Player is configured as an "apparatus for controlling a plurality of players," as recited in claim 25, that is capable of facilitating forming and controlling one or more groups of two or more Google Audio Players.

Claim 25	Google
	capability to display on a screen a first list showing at least available Google Audio Players. As an example, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display on its screen a list showing at least available Google Audio Players in a Google Wireless Audio System. This functionality is evidenced by the exemplary screenshots/images below: <u>Google Home app</u> 

Claim 25	Google
	  

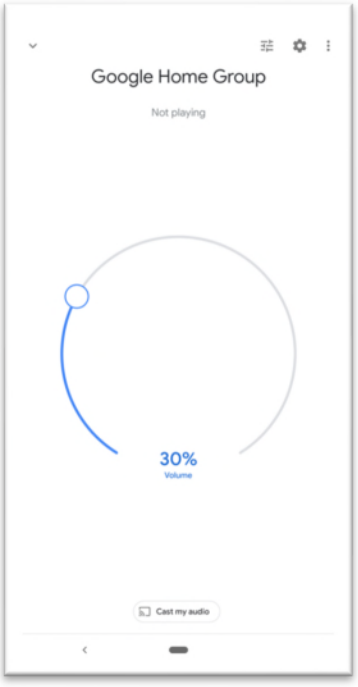
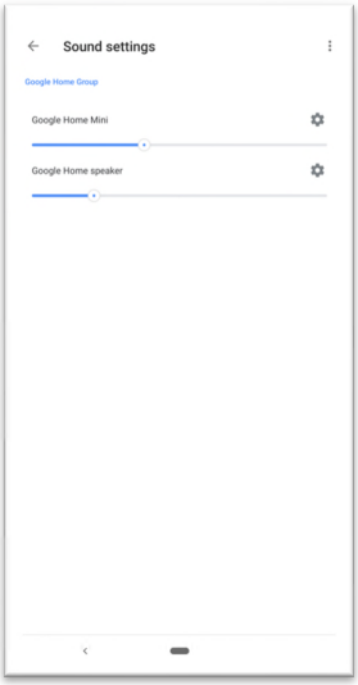
Claim 25	Google
	   <u>YouTube Music app</u>

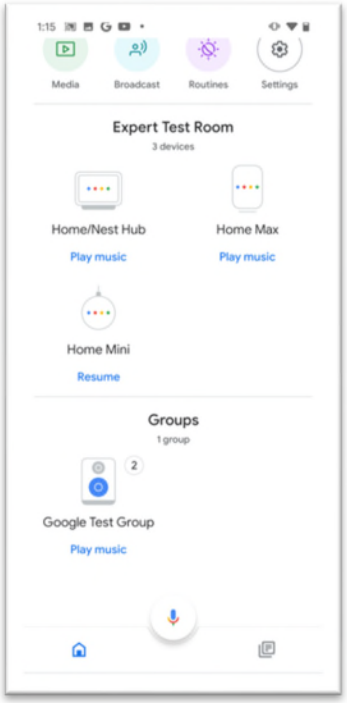
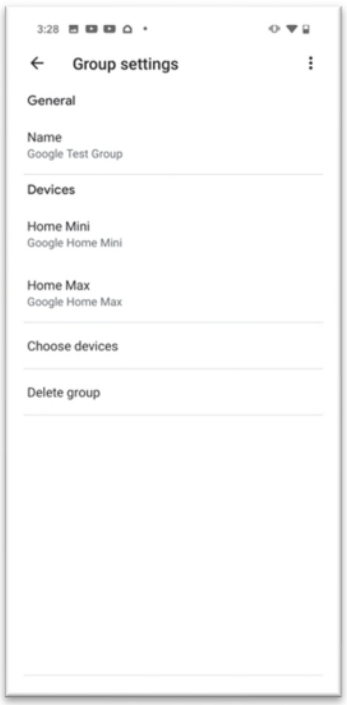
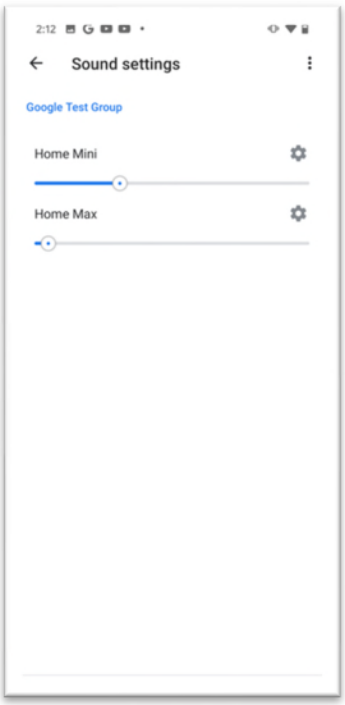
Claim 25	Google
	  Google Play Music app

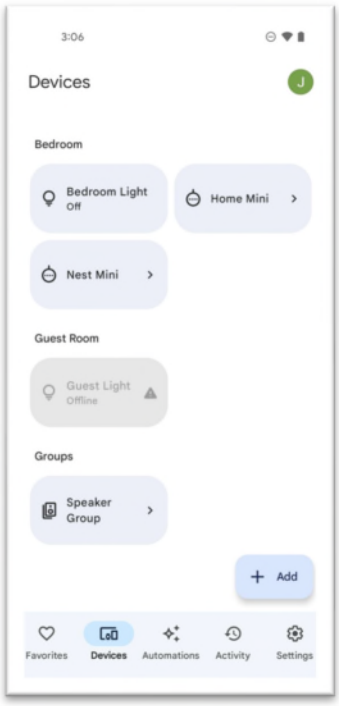
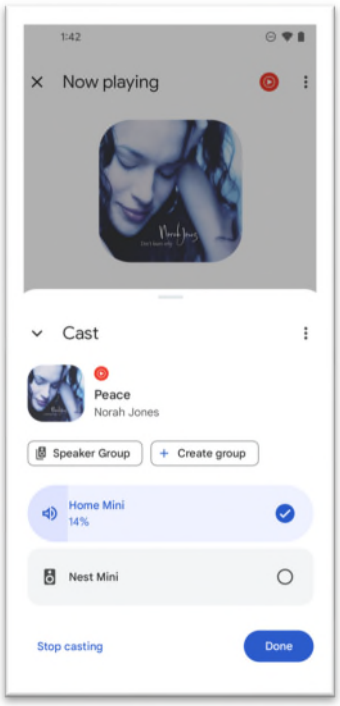
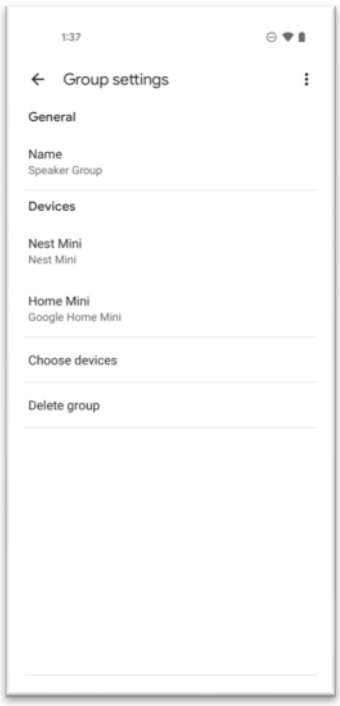
Claim 25	Google
	 Hub Audio Player 

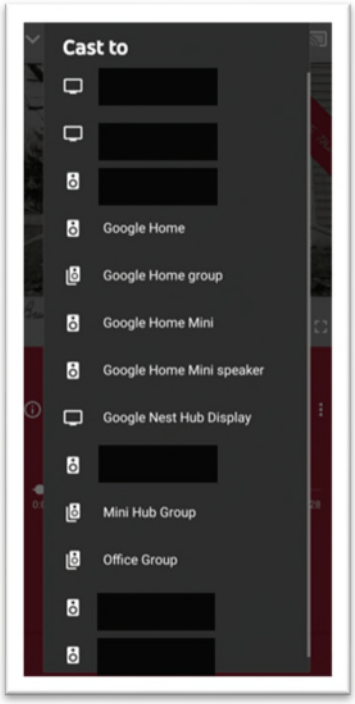
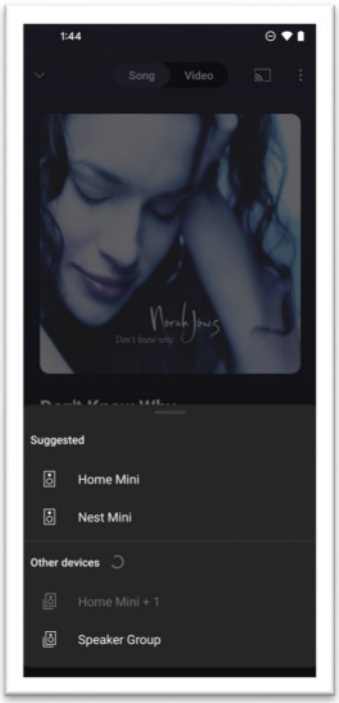
Claim 25	Google
	 *See also, e.g.*, Exs. 93, 123, 124.
[25.8] displaying a zone group including players from the available players when at least two of the available players are selected to form the zone group, wherein any one of the players in the group serves as a zone group head;	Each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display a zone group including Google Audio Players from the available Google Audio Players when at least two of the available Google Audio Players are selected to form the zone group, wherein any one of the Google Audio Players in the group serves as a zone group head. As an example, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to facilitate the formation and control of a group of two or more Google Audio Players that are configured to play back audio in synchrony. *See, e.g.*, Ex. 29 ("Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream."); 125("Group any combination of Google Nest or Home speakers and displays, Google streaming devices, and Google Pixel Tablets together for synchronous media throughout the home. You can

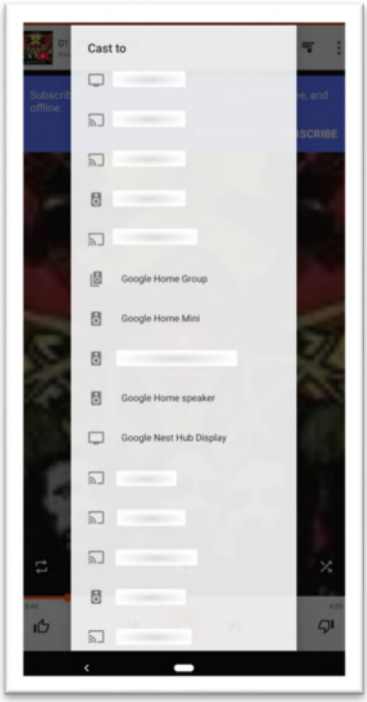
Claim 25	Google
	create pre-set speaker groups you use often or use the mini-player to add, remove, or move speakers when playing media."); Exs. 20, 61, 84, 93-94, 104, 106, 123, 124. In such a group, one of the Google Audio Players will be designated to serve as the "master" of the group (sometimes referred to by Google as the "leader" of the group), which constitutes a "zone group head," and every other Google Audio Player will be designated to serve as a "slave" of the group (sometimes referred to by Google as a "follower" of the group). *See, e.g.*, Ex. 122, 1277:10-13, 1278:1-6. In this regard, each Chromecast-enabled computing device and Hub Audio Player is programmed such that, after two or more Google Audio Players in a Chromecast-enabled audio system have been selected to form a group, the Chromecast-enabled computing device or Hub Audio Player functions to display a visual representation of the group on various app pages at various times. This functionality is evidenced by the exemplary screenshots/images below: Google Home app

Claim 25	Google
	  

Claim 25	Google
	   

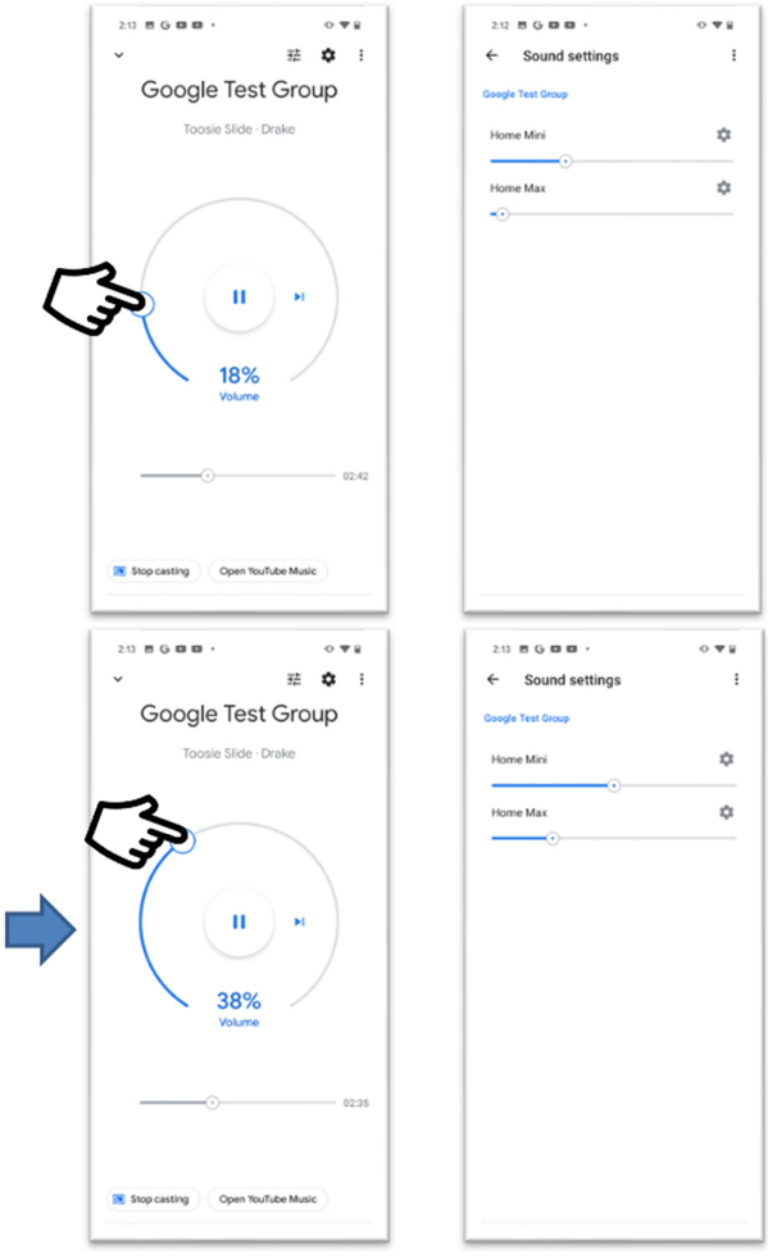
Claim 25	Google
	   YouTube Music app

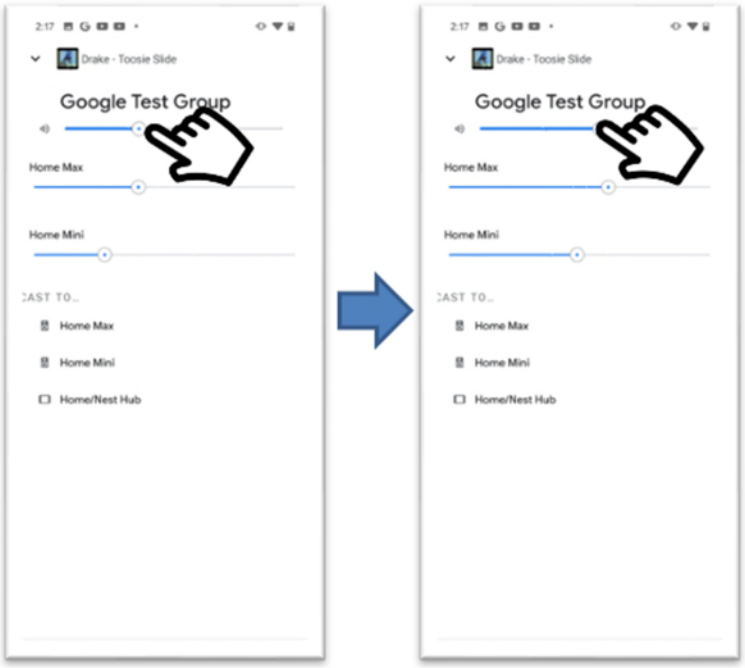
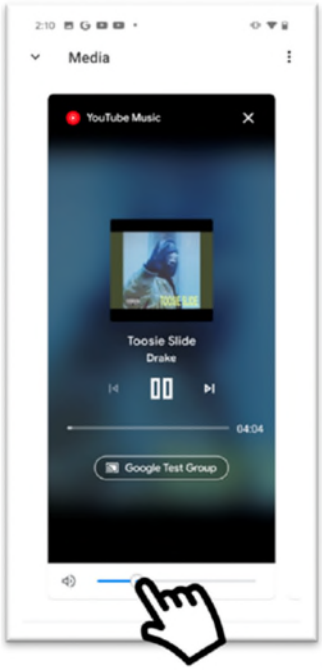
Claim 25	Google
	  Google Play Music app

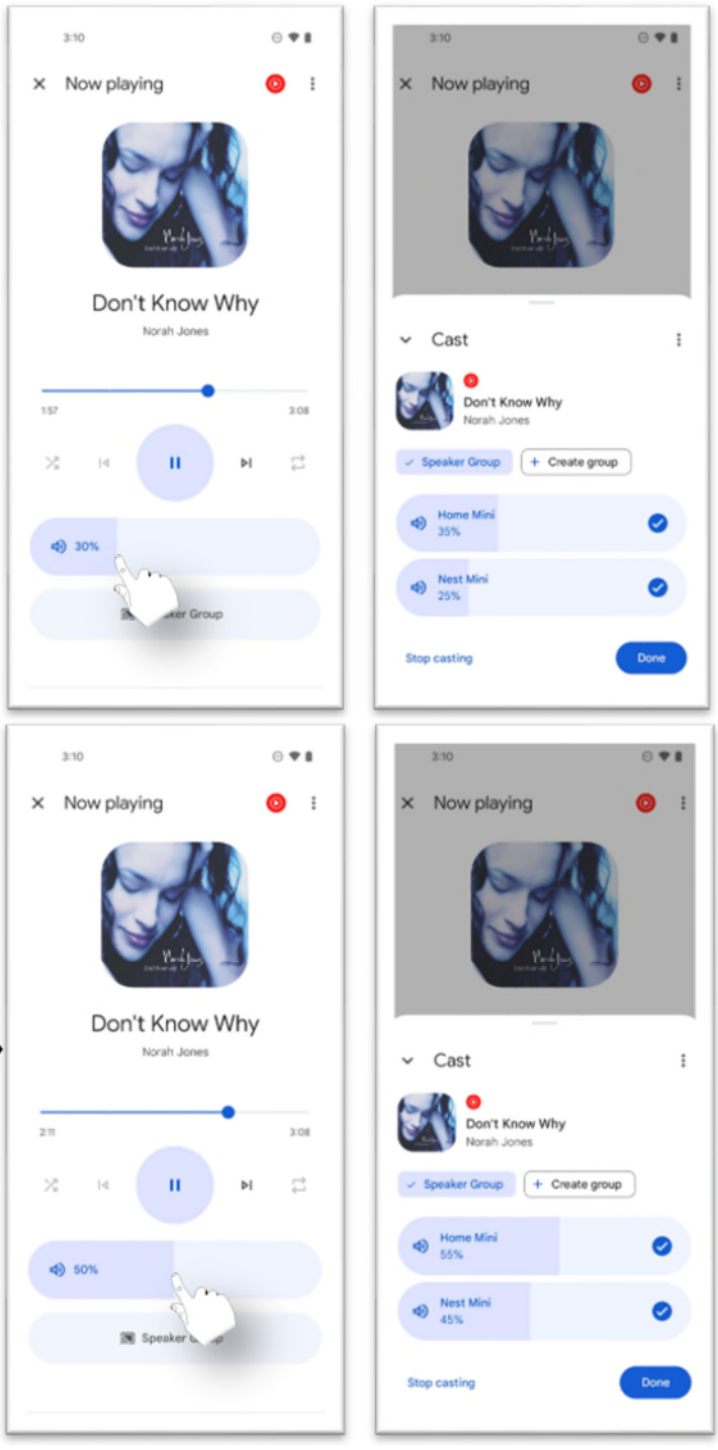
Claim 25	Google
	 Hub Audio Player 

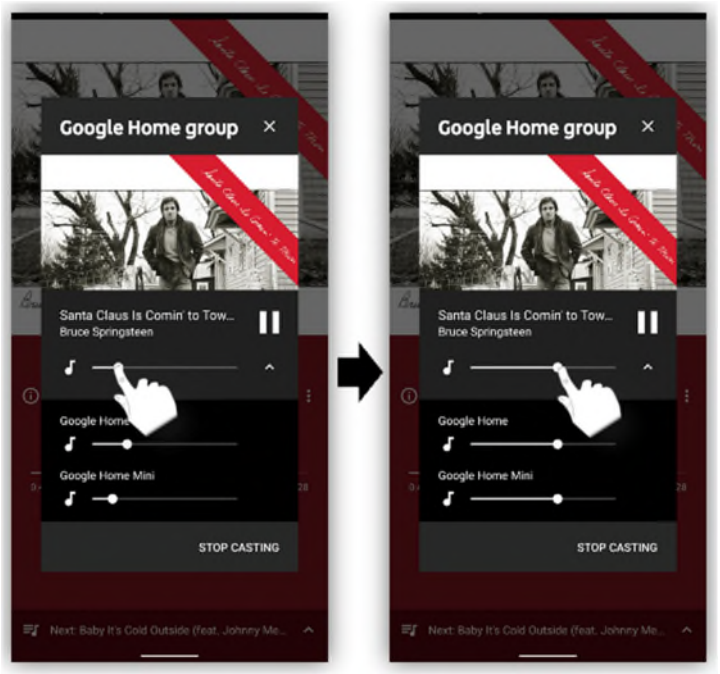
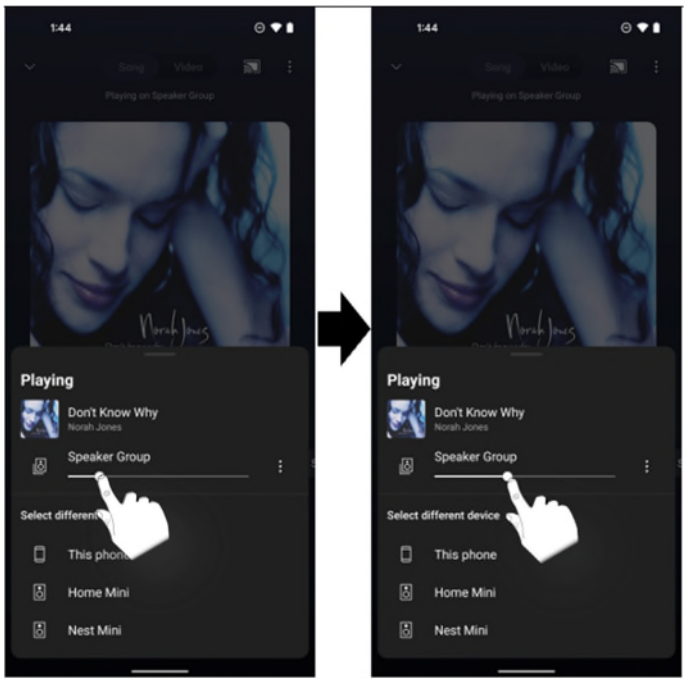
Claim 25	Google
	
[25.9] synchronizing all players in the zone group in accordance with the zone group head; and	Each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to synchronize all Google Audio players in a zone group in accordance with the zone group head. As an example, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to cause Google Audio players in a group to engage in synchronous playback of audio in accordance with the "master" Google Audio player of the group, which transmits information to each "slave" Google Audio player in the group that facilitates the synchronous playback of the audio. *See, e.g.*, Ex. 29 ("Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream."); Ex. 125 ("Group any combination of Google Nest or Home speakers and displays, Google streaming devices, and Google Pixel Tablets together for synchronous media throughout the home. You can create pre-set speaker groups you use often or use the mini-player to add, remove, or move speakers when

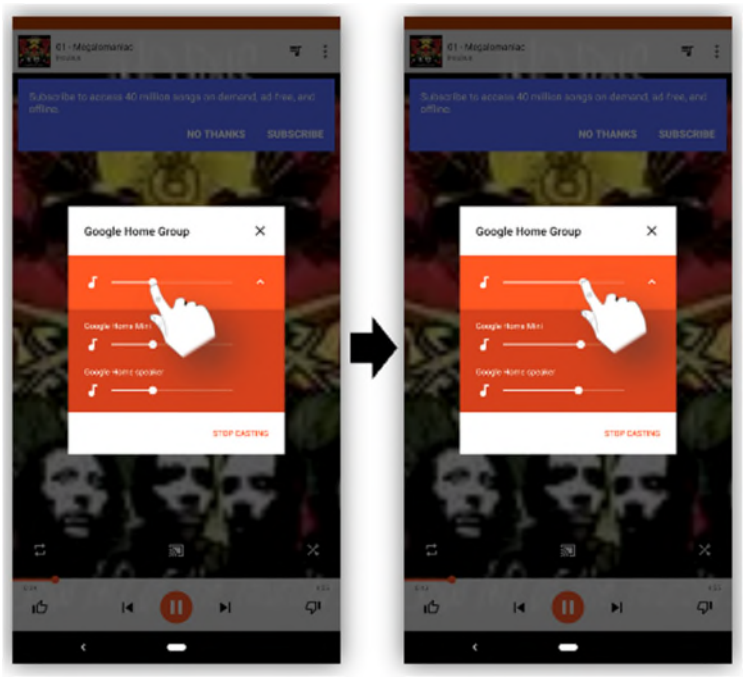
Claim 25	Google
	playing media."); Exs. 20, 61, 84, 93-94, 104, 106, 123, 124; Ex. 122, 1259:20-1260:5, 1268:23-1269:8, 1300:6-15, 1315:5-10.
[25.10] adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.	Each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to adjust a volume meter represented by an averaged value of audio volumes of Google Audio players in a group, wherein said adjusting of the volume meter includes changing a volume of each of the group of Google Audio players synchronously in accordance with an adjustment made by a user. As an example, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display a volume meter representing a "group volume" for the Google Audio players in the group, where the "group volume" meter is represented by an averaged value of the individual volumes of the Google Audio players in the group. Each Chromecast-enabled computing device and Hub Audio Player is also programmed with the capability to adjust the "group volume" meter for the Google Audio players in the group, which includes changing the individual volume of each Google Audio player in the group synchronously in accordance with an adjustment made by a user. *See, e.g.*, Ex. 55 ("When casting to a group, there are two ways to change the volume: 1. Changing the **group volume**. This action will change the volume of all speakers within the group.") (emphasis in original); Ex. 126 [Google Cast for Audio Multi-room Certification Test Specification Version 6.3] ("The group volume level is a single volume scale representing the group. In an active cast session it can be modified by the audio source, e.g. the content app, or in the Google Home app (on Android). The group volume level is the

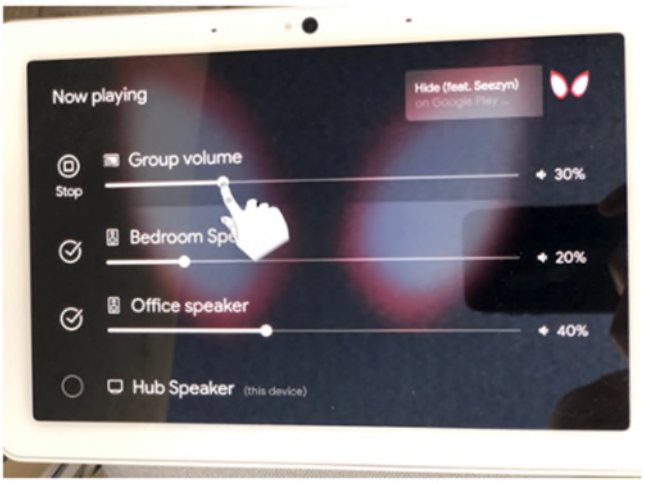
Claim 25	Google
	average of all member's logical volume level."); Exs. 84, 123-125. This functionality is evidenced by the exemplary screenshots/images below: <u>Google Home app</u> 

Claim 25	Google
	 

Claim 25	Google
	 YouTube Music app

Claim 25	Google
	  Google Play Music app

Claim 25	Google
	 Hub Audio Player

Claim 25	Google
	  

Claim 25	Google
	

248. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more claims of the '014 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe one or more claims of the '014 Patent. In particular, (a) Google had actual knowledge of the '014 Patent or was willfully blind to its existence prior to (at least as early as September 2016), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the '014 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses thereof, including infringing uses (*see* Exs. 29, 34-39, 55), (c) Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the '014 Patent, and (d) users of the Google Wireless Audio System directly infringe one or more claims of the '014 Patent. For instance, at a minimum, Google has supplied and continues to supply the Google Apps to customers while knowing that installation and/or use of the Google Apps will infringe one or more

claims of the ’014 Patent and that Google’s customers then directly infringe one or more claims of the ’014 Patent by installing and/or using the Google Apps in accordance with Google’s product literature. *See, e.g.*, id.

249. As another example, Google has supplied and continues to supply Hub Audio Players to customers while knowing that use of these products will infringe one or more claims of the ’014 Patent and that Google’s customers then directly infringe one or more claims of the ’014 Patent by using these Hub Audio Players in accordance with Google’s product literature. *See*, *e.g.*, Exs. 29, 84.

250. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the ’014 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the Google Wireless Audio System that contribute to the direct infringement of the ’014 Patent by users of the Google Wireless Audio System. In particular, (a) Google had actual knowledge of the ’014 Patent or was willfully blind to its existence prior to (at least as early as September 2016), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers for sale, sells, and/or imports, in connection with the Google Wireless Audio System, one or more material components of the invention of the ’014 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Google knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the ’014 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the ’014 Patent. For instance, at a minimum, Google offers for sale, sells, and/or imports the Google Apps for installation on devices (e.g., smartphones, tablets, and computers) that meet one or more claims of the ’014 Patent. *See, e.g.*, Exs. 29, 34-39, 55. The Google Apps are material components of the devices that meet the one or more claims of the ’014 Patent. Further,

Google especially made and/or adapted the Google Apps for use in devices that meet the one or more claims of the '014 Patent, and the Google Apps are not a staple article of commerce suitable for substantial noninfringing use. Google's customers then directly infringe the one or more claims of the '014 Patent by installing and/or using the Google Apps on the customers' devices.

251. As another example, Google offers for sale, sells, and/or imports software updates for Hub Audio Players that meet one or more claims of the '014 Patent. *See, e.g.*, Exs. 29, 84, 85. These software updates are material components of the Hub Audio Players that meet the one or more claims of the '014 Patent. Further, Google especially made and/or adapted these software updates for use in the Hub Audio Players that meet the one or more claims of the '014 Patent, and these software updates are not staple articles of commerce suitable for substantial noninfringing use. Google's customers then directly infringe the one or more claims of the '014 Patent by installing and using software updates on the Hub Audio Players.

252. Google's infringement of the '014 Patent is also willful because Google (a) had actual knowledge of the '014 Patent or was willfully blind to its existence prior to (at least as early as September 2016), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) engaged in the aforementioned activity despite an objectively high likelihood that Google's actions constituted infringement of the '014 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Google.

253. Additional allegations regarding Google's pre-suit knowledge of the '014 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

254. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '014 Patent.

255. Sonos is entitled to recover from Google all damages that Sonos has sustained as a result of Google's infringement of the '014 Patent, including, without limitation, a reasonable royalty and lost profits.

256. Google's infringement of the '014 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

257. Google's infringement of the '014 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

258. Google's infringement of the '014 Patent has caused irreparable harm (including the loss of market share) to Sonos and will continue to do so unless enjoined by this Court.

COUNT II: INFRINGEMENT OF U.S. PATENT NO. 8,588,949

259. Sonos incorporates by reference and re-alleges paragraphs 85-93 and 110-25 of this Second Amended Complaint as if fully set forth herein.

260. Google and/or users of the Google Wireless Audio System have directly infringed (either literally or under the doctrine of equivalents) and have continued to directly infringe up to the date of expiration of the '949 Patent one or more of the claims of the '949 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Google Wireless Audio System within the United States and/or importing the Google Wireless Audio System into the United States without authority or license.

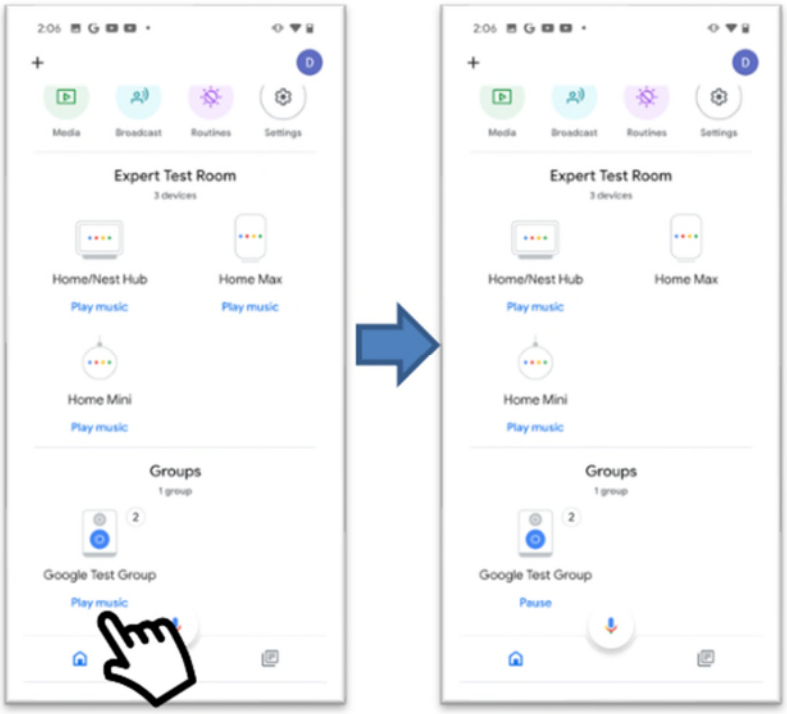
261. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 1 of the '949 Patent in connection with the Google Wireless Audio System. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the Google Wireless Audio System that it obtains during discovery.

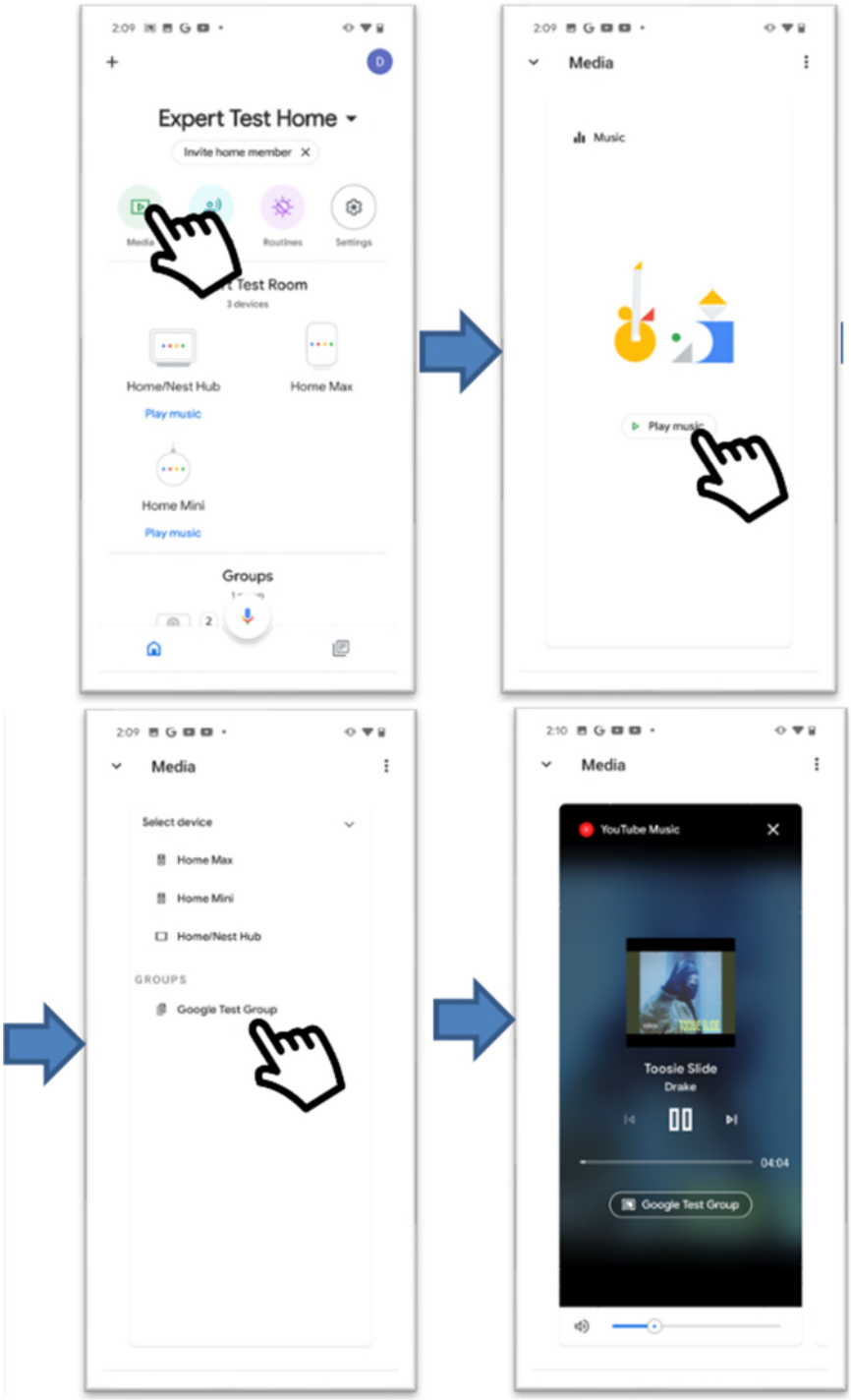
Claim 1	Google
A multimedia controller including a processor, the controller configured to:	At least each smartphone, tablet, and computer installed with the Google Home app, the YouTube Music app, and/or the Google Play Music app (where a computing device installed with at least one of these apps is referred to herein as a "Chromecast-enabled computing device"[6]) comprises a "multimedia controller including a processor," as recited in claim 1. *See, e.g.*, Exs. 40-43, 87-92. At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max,[7] Nest Audio, and Nest Wifi Point comprises an "independent playback device," as recited in claim 1.
provide a user interface for a player group, wherein the player group includes a plurality of players in a local area network, and wherein each player is an independent	Each Chromecast-enabled computing device and Hub Audio Player is configured to provide a user interface for a player group that includes a plurality of Google Audio Players in a local area network (LAN), where each Google Audio Player is an independent playback device configured to playback a multimedia output from a multimedia source. For instance, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to provide a user interface that facilitates forming and/or controlling one or more groups of Google Audio Players

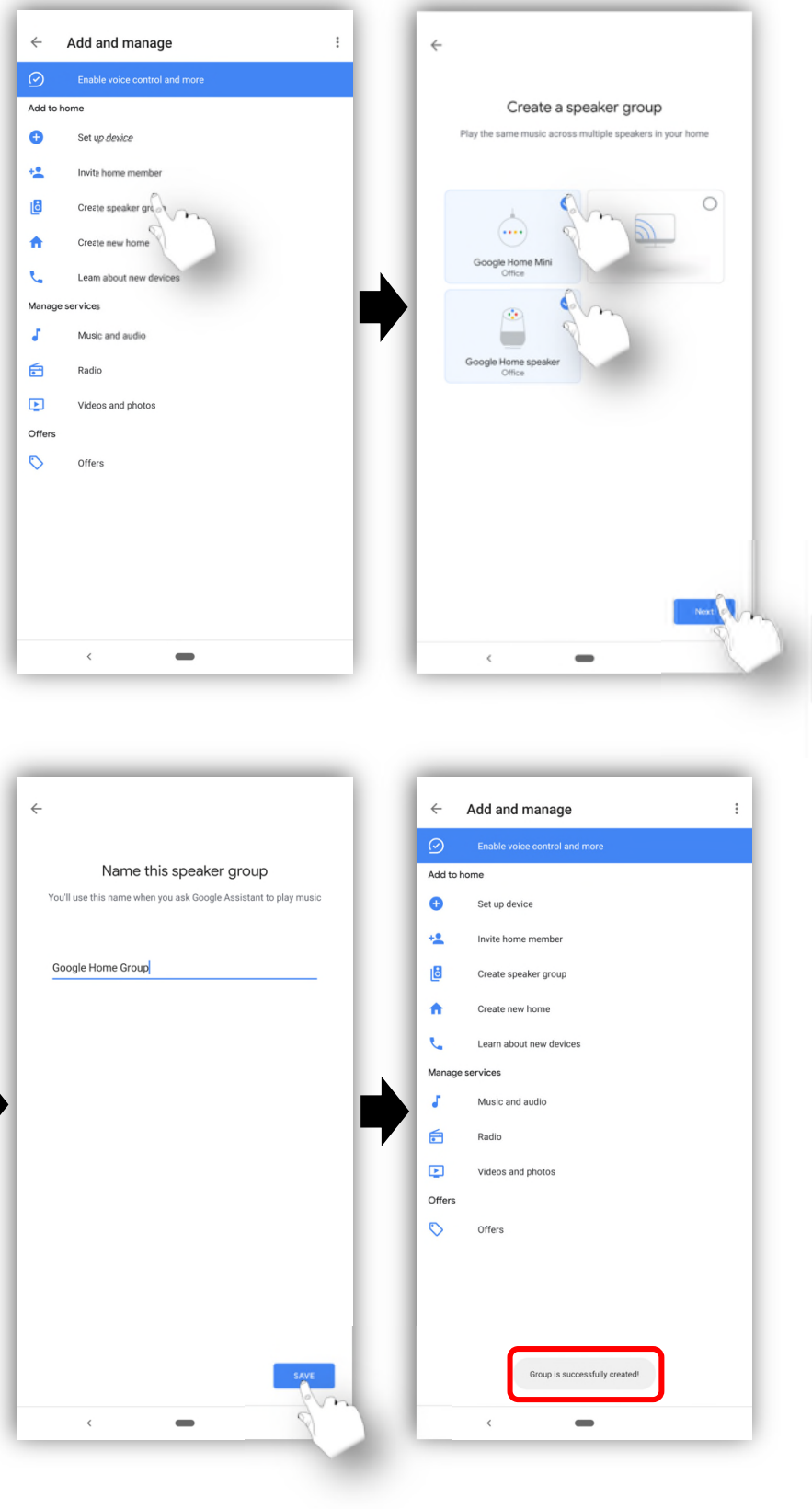
[6] Each of the Pixel 3, Pixel 3 XL, Pixel 3a, Pixel 3a XL, Pixel 4, Pixel 4 XL, Pixel 4a, Pixel 4a (5G), Pixel 5, Pixel 5a, Pixel 6, Pixel 6 Pro, Pixel 6a, Pixel 7, Pixel 7 Pro, Pixel 7a, Pixel Fold, Pixel 8, Pixel 8 Pro, Pixel 8a, Pixel 9, Pixel 9 Pro, Pixel 9 Pro XL, and Pixel 9 Pro Fold phones, the Pixel Slate and Pixel Tablet tablets, and the Pixelbook and Pixelbook Go laptops installed with an Android version of the Google Home app, the YouTube Music app, and/or the Google Play Music app is an example of a "Chromecast-enabled computing device." Likewise, each other smartphone, tablet, and computer installed with an Android or iOS version of the Google Home app, the YouTube Music app, and/or the Google Play Music app is an example of a "Chromecast-enabled computing device," including by way of example, Apple and Samsung phones and tablets.

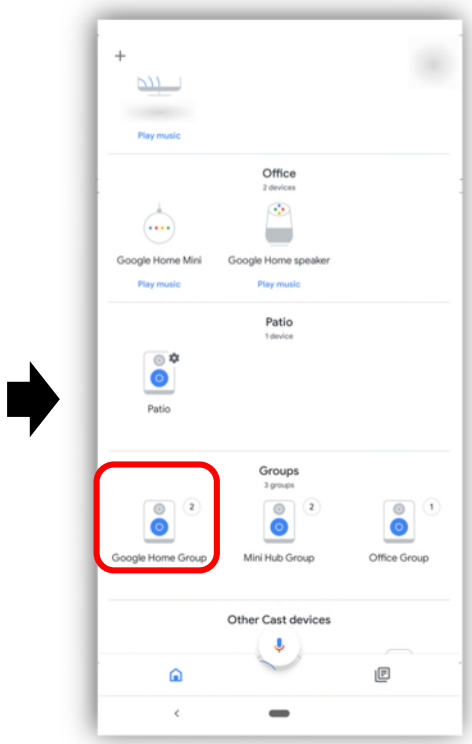
[7] In addition to being configured as an "independent playback device," as recited in claim 1, each Home Hub, Nest Hub, and Nest Hub Max (referred to herein as a "Hub Audio Player") is installed with Home/Nest Hub software such that the given Hub Audio Player is configured as a "multimedia controller," as recited in claim 1, that is capable of facilitating forming and controlling one or more groups of two or more Google Audio Players.

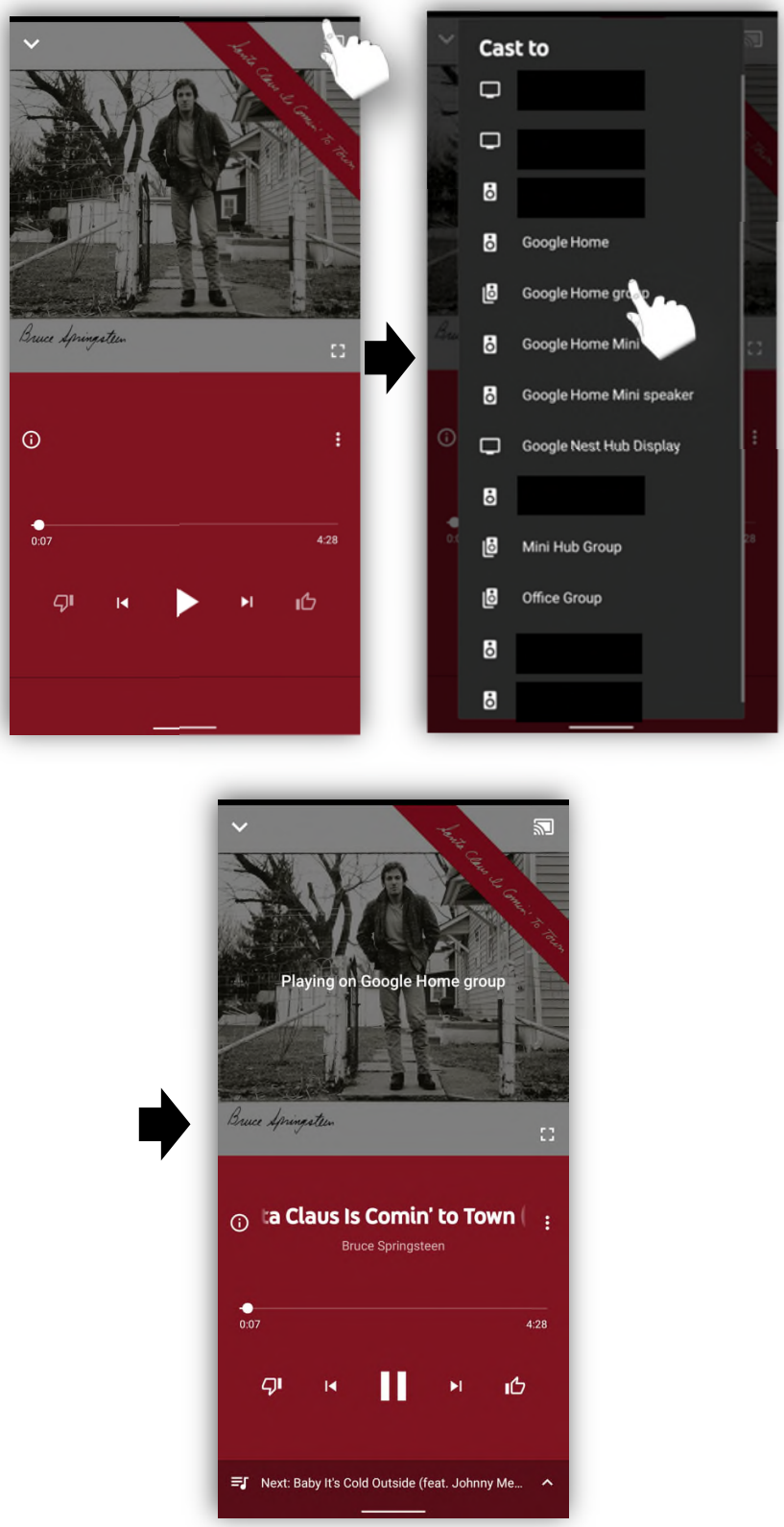
Claim 1	Google
playback device configured to playback a multimedia output from a multimedia source;	(*e.g.*,via a Google Home, YouTube Music, Google Play Music, or Hub Audio Player user interface). *See, e.g.*, Exs. 29, 34, 36, 38, 93. Some exemplary screenshots of aspects of the user interface provided by a Chromecast-enabled computing device or Hub Audio Player are illustrated below. Each group includes two or more Google Audio Players in a local Wi-Fi network (which is a LAN) that are configured to play back audio in synchrony with one another, where each Google Audio Player is an independent playback device configured to playback at least an audio output from an audio source (*e.g.*, Google Play Music, Spotify, etc.). *See e.g.*, Ex. 29 ("Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream."); Exs. 94, 106.
accept via the user interface an input to facilitate formation of the player group, wherein the input to facilitate formation of the player group indicates that at least two of the plurality of players in the local area network are to be included in the player group for synchronized playback of a multimedia output from the same	Each Chromecast-enabled computing device and Hub Audio Player is configured to accept via the user interface an input to facilitate formation of the player group, where the input to facilitate formation of the player group indicates that at least two of the plurality of Google Audio Players in the LAN are to be included in the player group for synchronized playback of a multimedia output from the same multimedia source. For instance, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display a GUI view (*e.g.*, via a Google Home, YouTube Music, Google Play Music, or Hub Audio Player user interface) through which the Chromecast-enabled computing device or Hub Audio Player receives user input that facilitates formation of a group of at least two Google Audio Players in a local Wi-Fi network that are configured to play back audio in synchrony. *See, e.g.*, Ex. 29 ("Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music

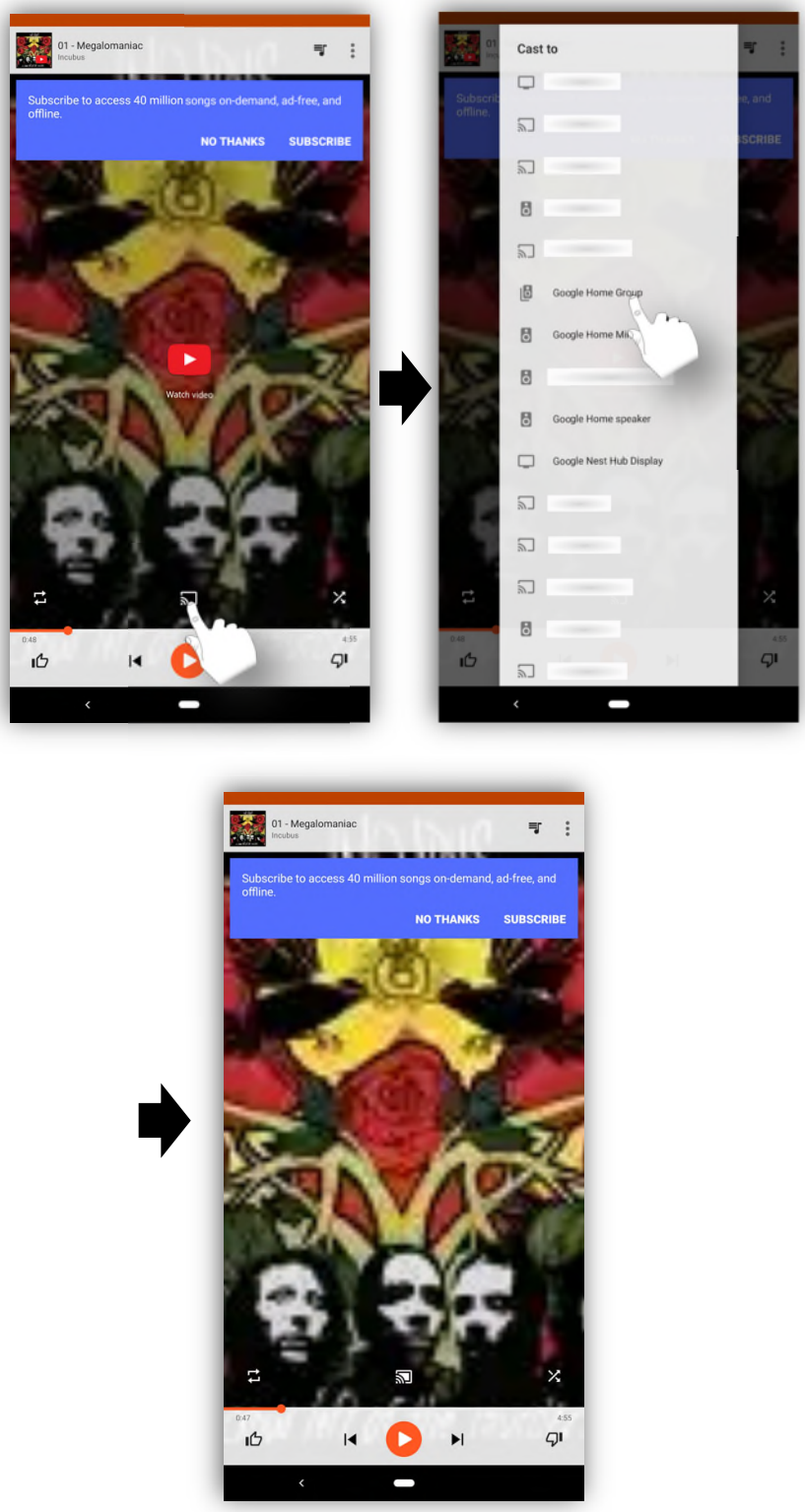
Claim 1	Google
multimedia source;	throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream."); Exs. 93-94, 106. Examples of this functionality are illustrated in the following sequences of screenshots/images. <u>Google Home app</u> 

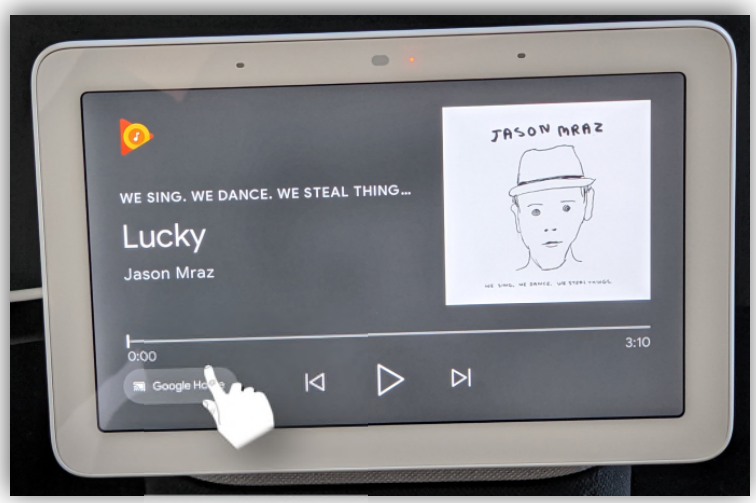
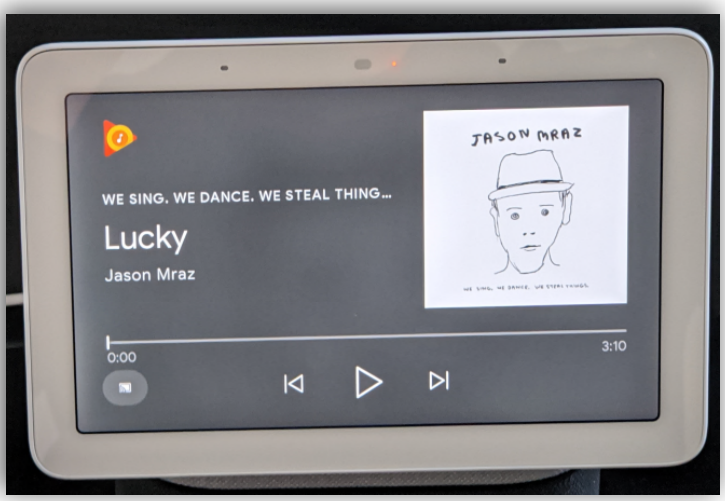
Claim 1	Google
	

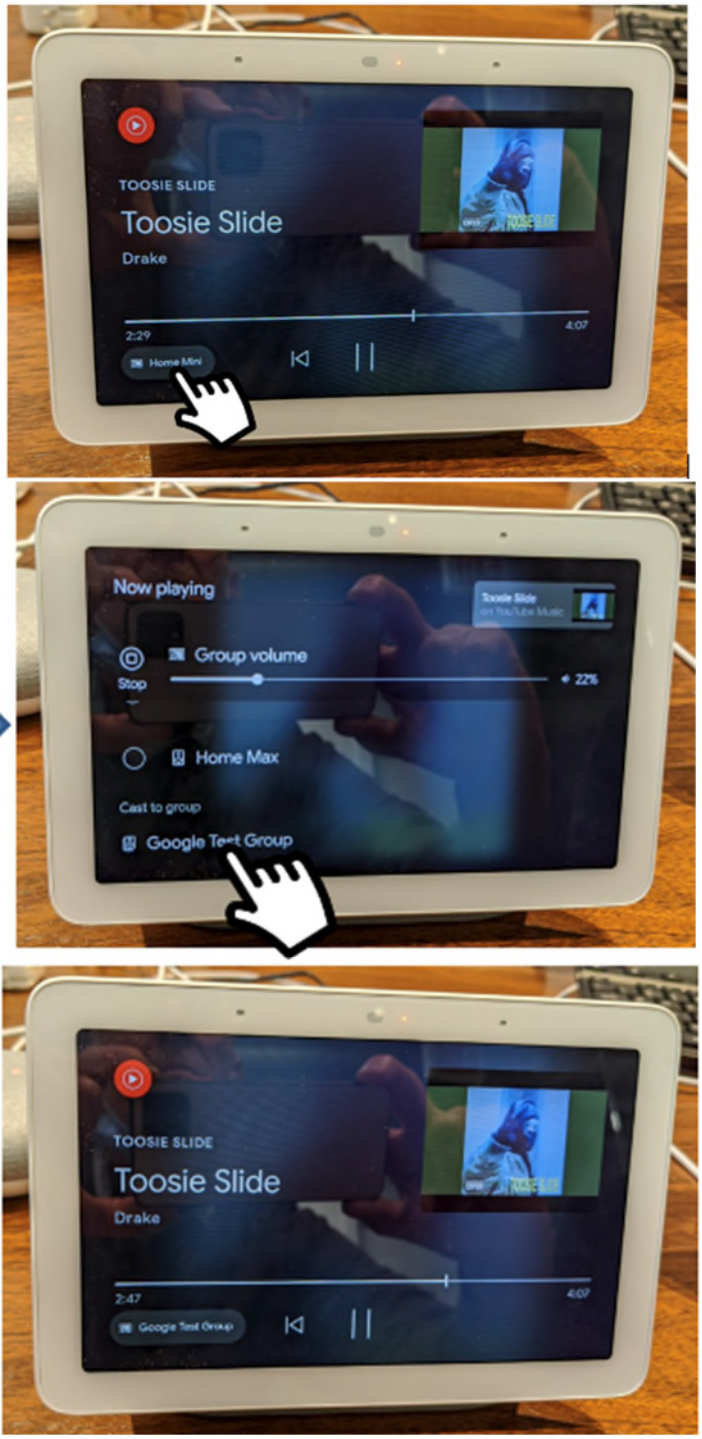
Claim 1	Google
	

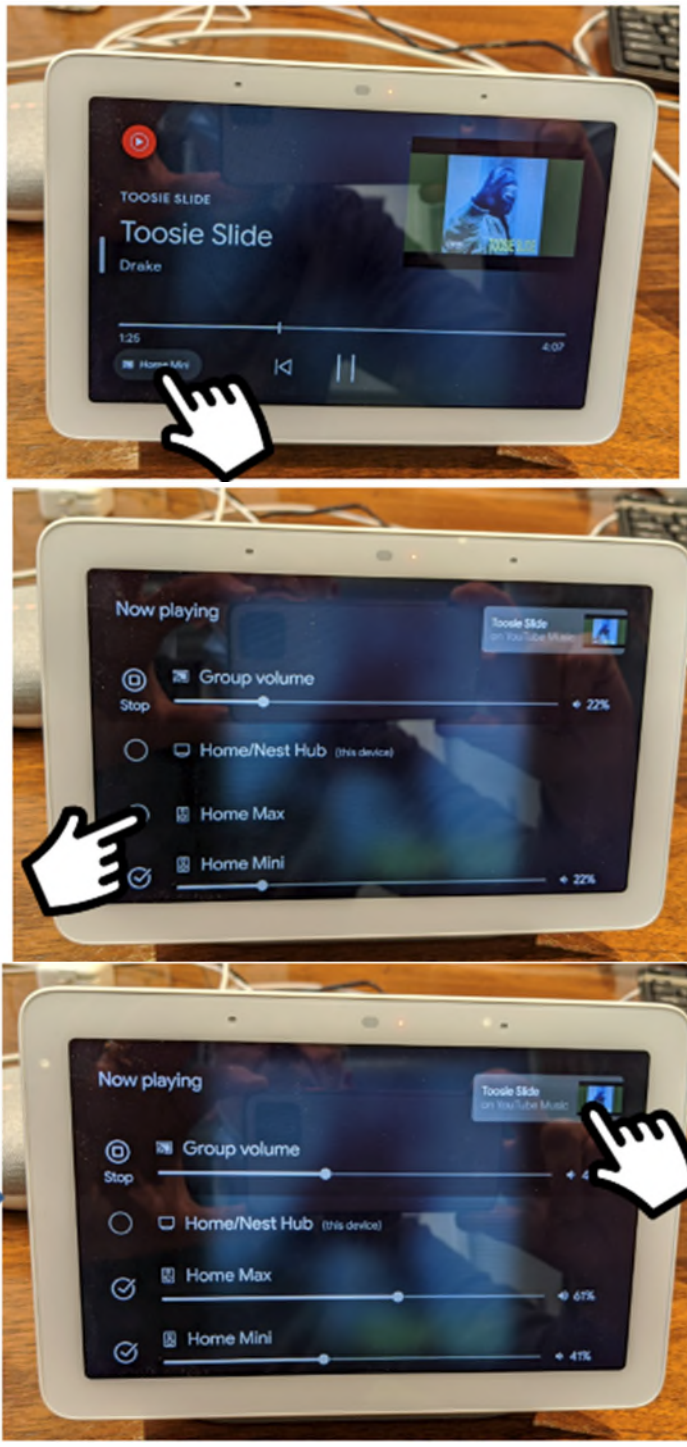
Claim 1	Google
	 YouTube Music App

Claim 1	Google
	 Google Play Music app

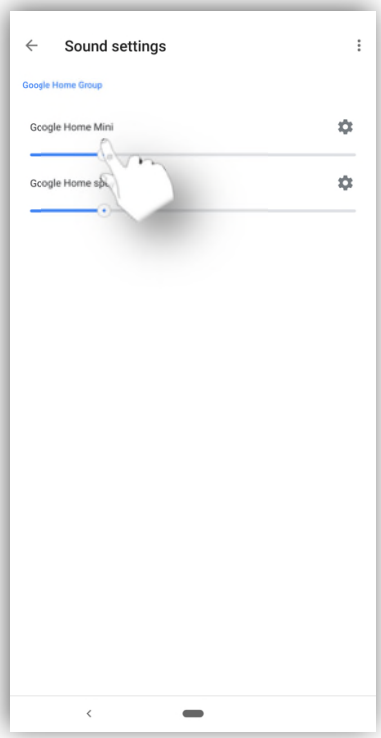
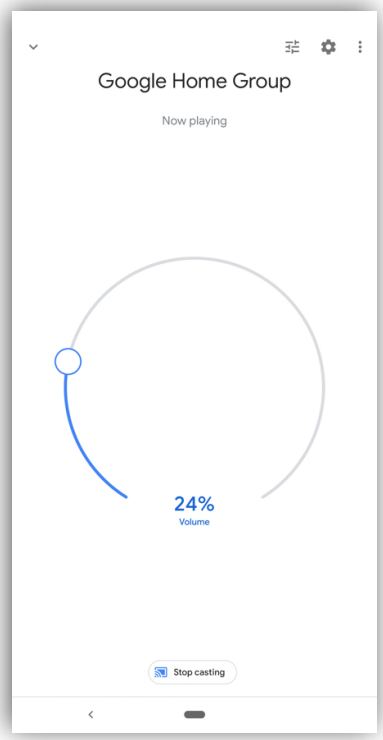
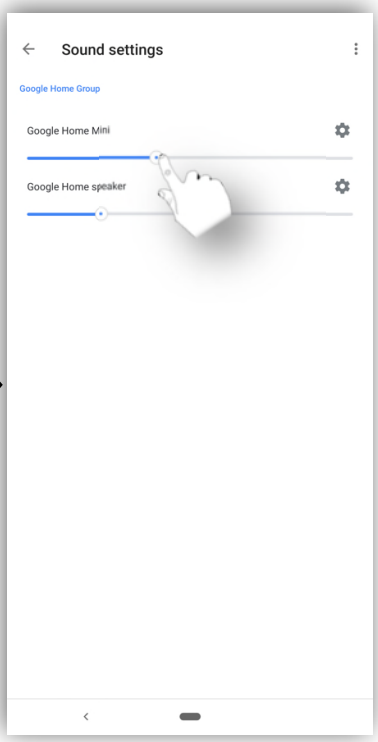
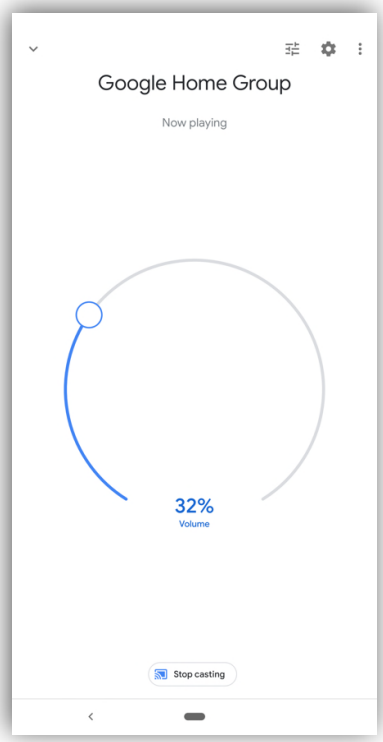
Claim 1	Google
	 Hub Audio Player

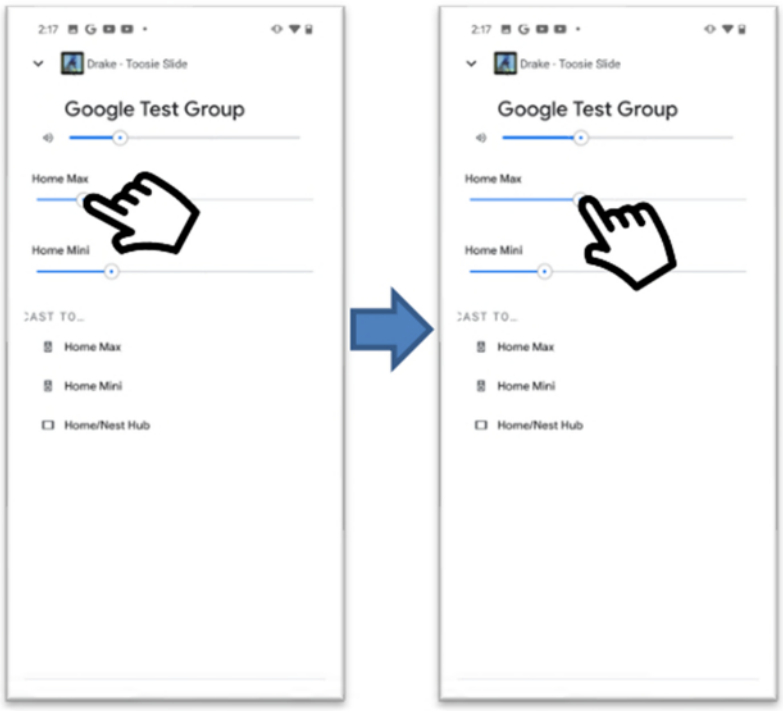
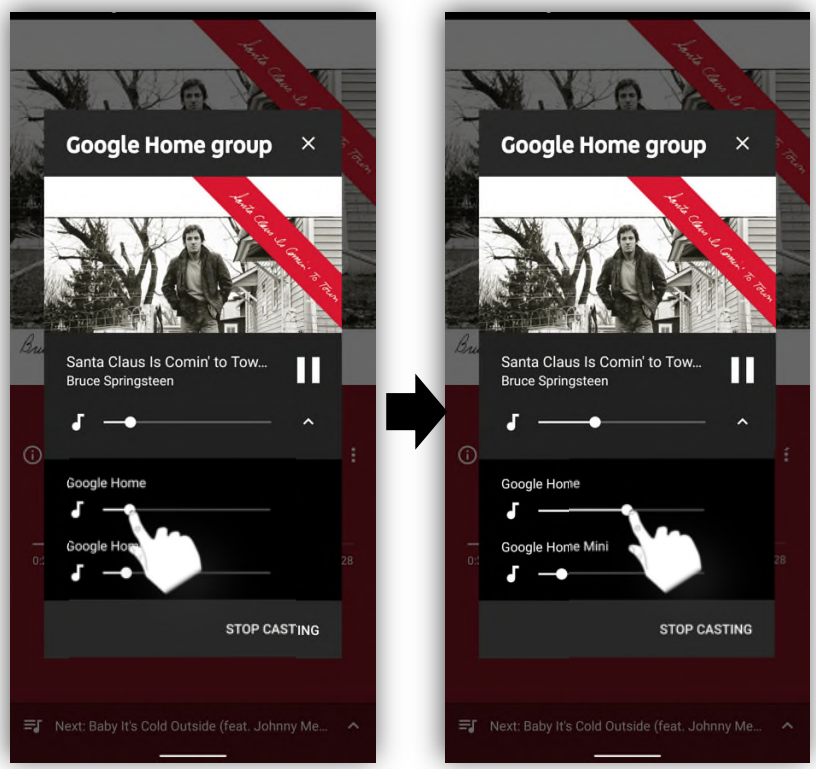
Claim 1	Google
	  

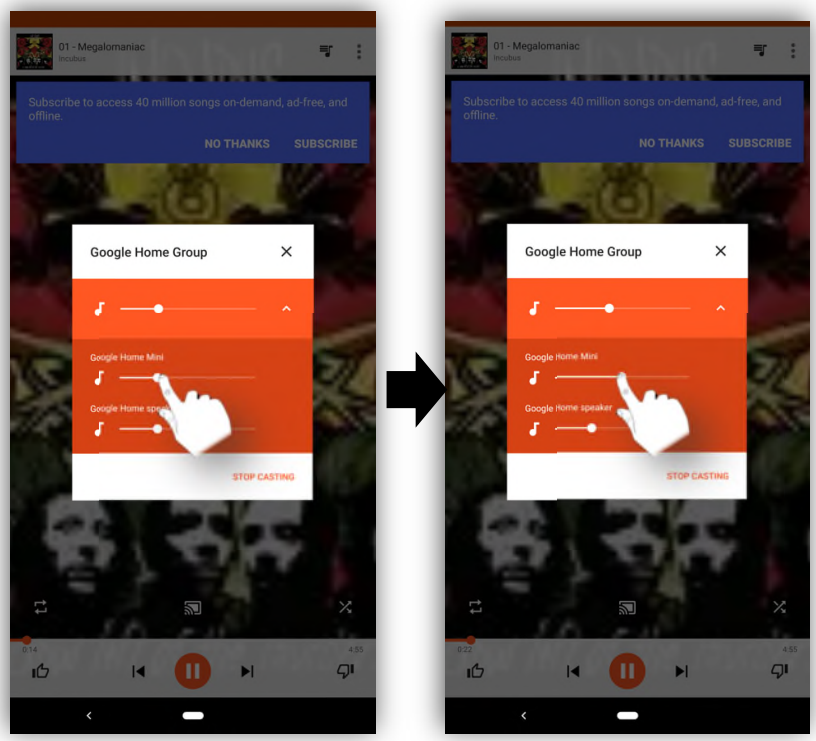
Claim 1	Google
	

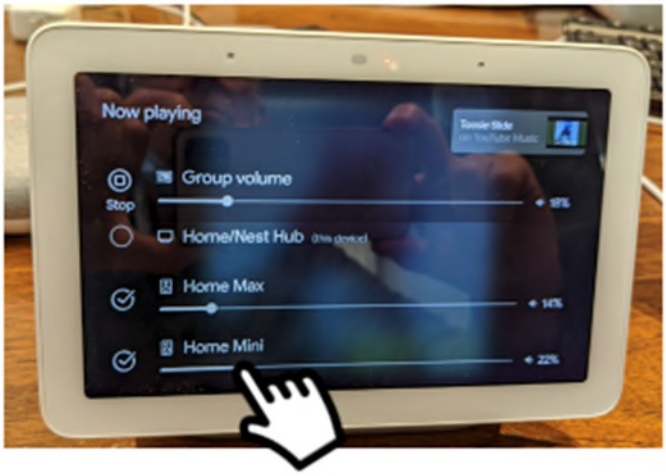
Claim 1	Google
	

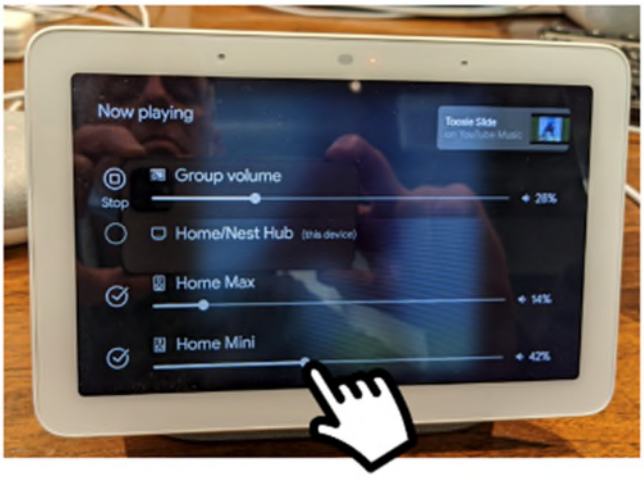
Claim 1	Google
	
for any individual player in the player group, accept via the user interface a player-specific input to adjust a volume of that individual player, wherein the player-specific input to adjust the volume of that individual player causes that individual player to adjust its volume; and	Each Chromecast-enabled computing device and Hub Audio Player is configured to, for any individual Google Audio Player in the player group, accept via the user interface a player-specific input to adjust a volume of that individual Google Audio Player, where the player-specific input to adjust the volume of that individual Google Audio Player causes that individual Google Audio Player to adjust its volume. For instance, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display a GUI view (*e.g.*, via a Google Home, YouTube Music, Google Play Music, or Hub Audio Player user interface) having a respective player-specific volume slider for each individual Google Audio Player in a group through which the Chromecast-enabled computing device or Hub Audio Player accepts a player-specific input to adjust a volume of an individual Google Audio Player, which in turn causes the individual Google Audio Player to adjust its volume. Examples of this functionality are illustrated in the following sequences of screenshots. Google Home app

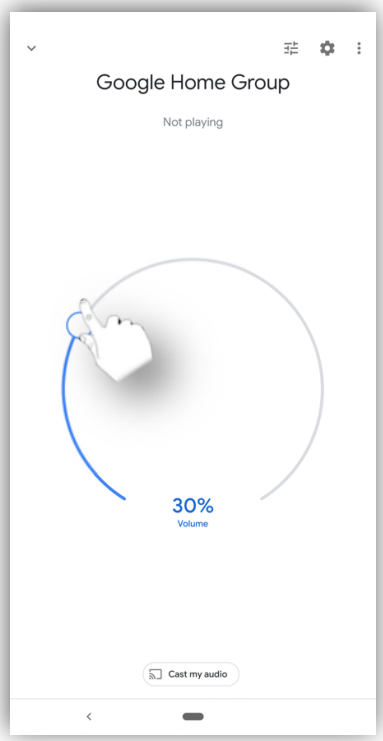
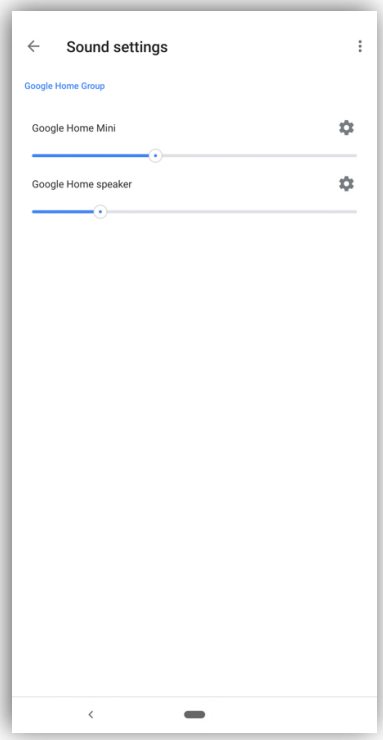
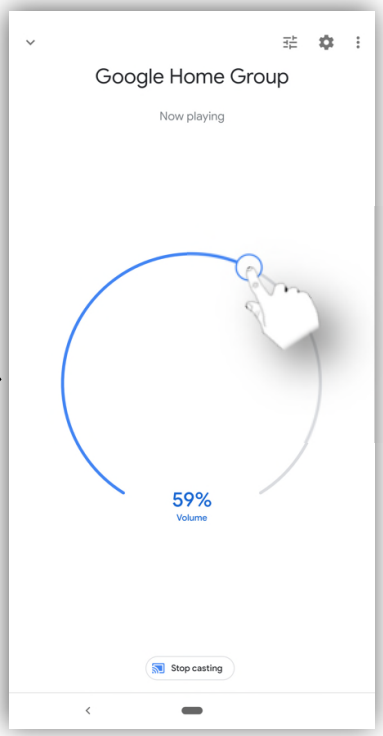
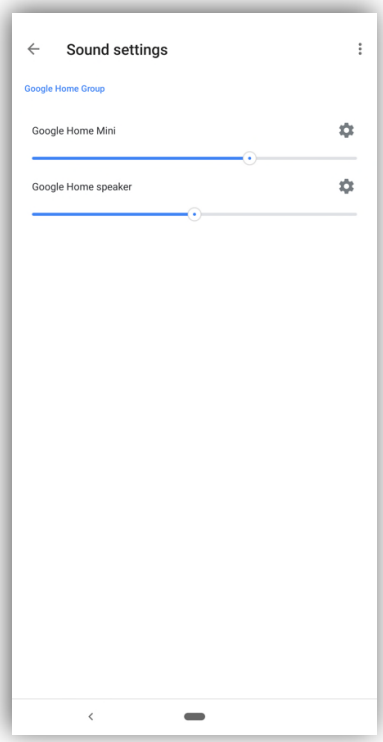
Claim 1	Google
	   

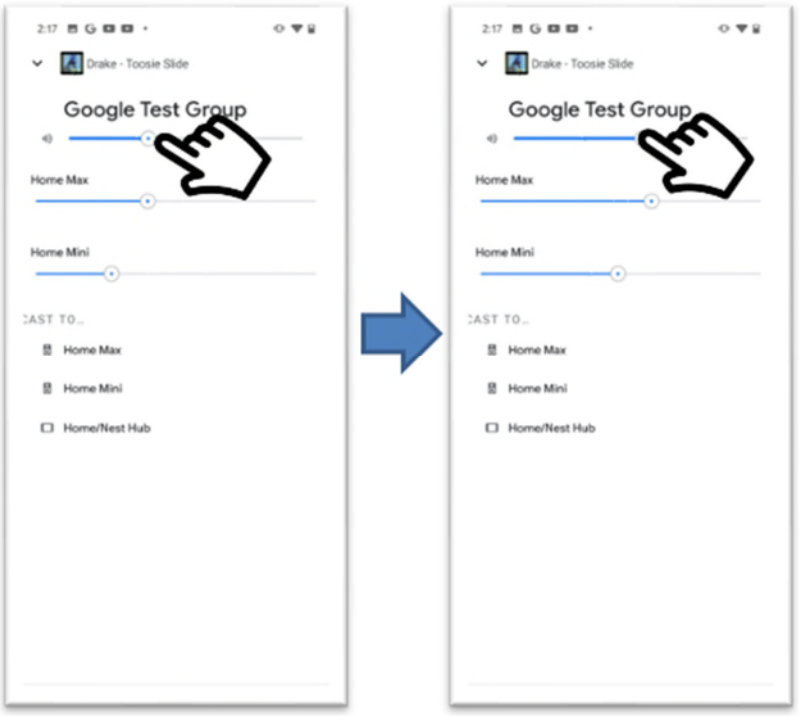
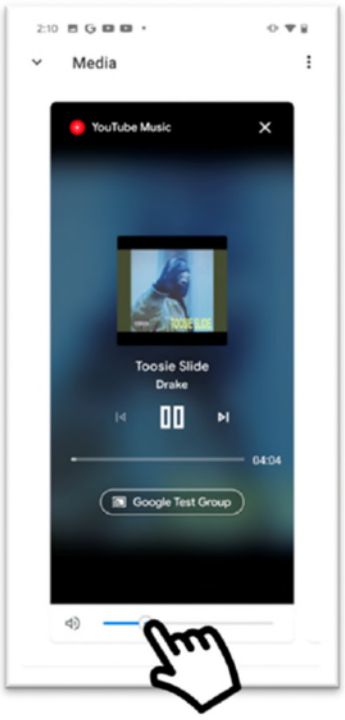
Claim 1	Google
	 YouTube Music App 

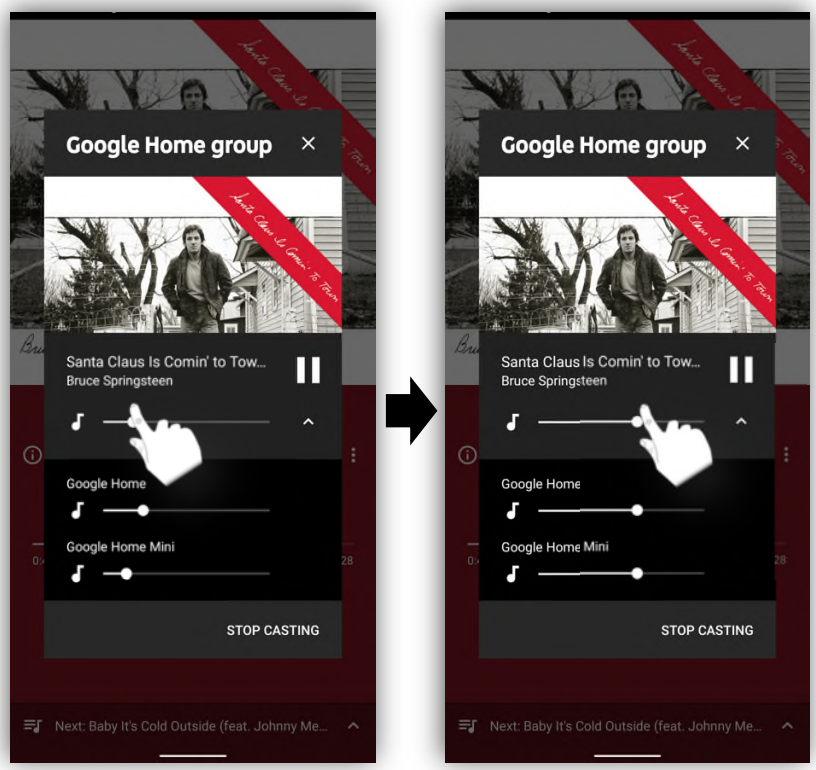
Claim 1	Google
	Google Play Music app  Hub Audio Player

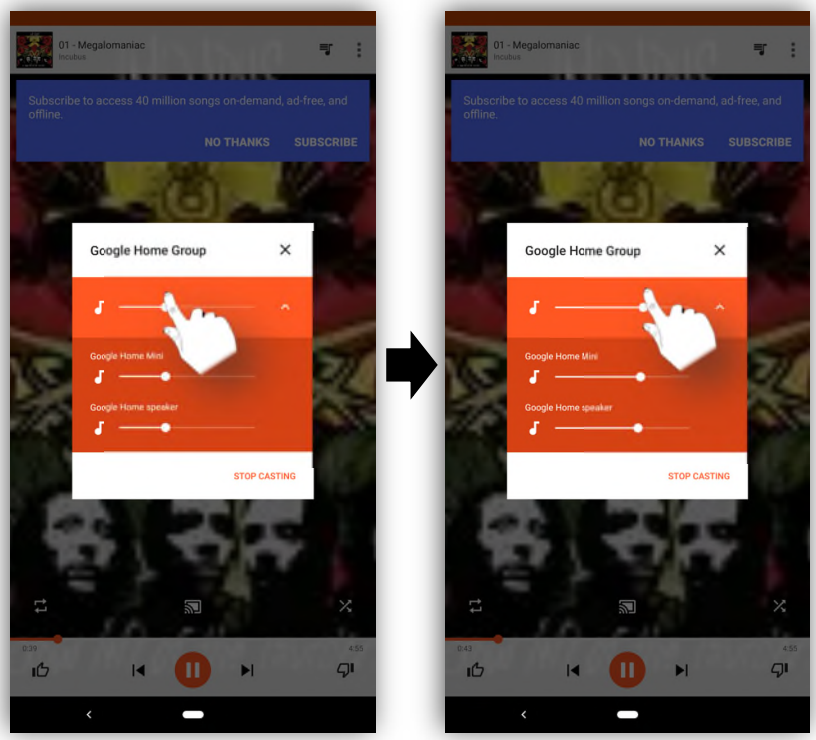
Claim 1	Google
	  

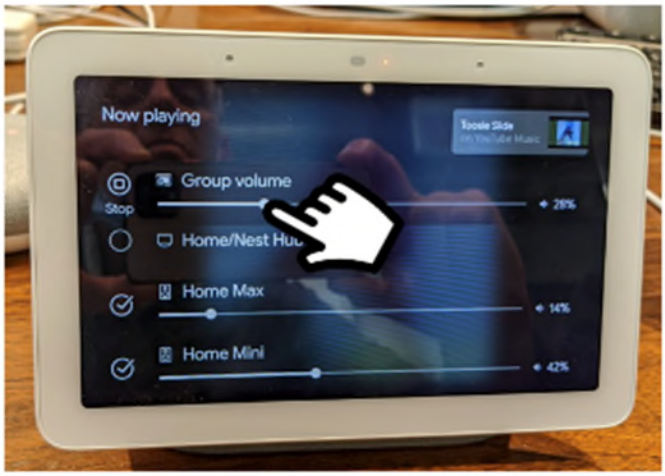
Claim 1	Google
	 *See also, e.g.*, Ex. 55 ("When casting to a group, there are two ways to change the volume: . . . 2. Changing a **single speaker's volume** when it's part of a group. This action will only change that individual speaker.") (emphasis in original); Exs. 29, 84, 106.
accept via the user interface a group-level input to adjust a volume associated with the player group, wherein the group-level input to adjust the volume associated with the player group causes each of the players in the player group to adjust its respective volume.	Each Chromecast-enabled computing device and Hub Audio Player is configured to accept via the user interface a group-level input to adjust a volume associated with the player group, where the group-level input to adjust the volume associated with the player group causes each of the Google Audio Players in the player group to adjust its respective volume. For instance, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display a GUI view (*e.g.*, via a Google Home, YouTube Music, Google Play Music, or Hub Audio Player user interface) having a "Group volume" slider for a group of Google Audio Players through which the Chromecast-enabled computing device or Hub Audio Player accepts a group-level input to adjust a volume associated with the group of Google Audio Players, which in turn causes each Google Audio Player in the group to adjust its respective volume. Examples of this functionality are illustrated in the following sequences of screenshots. Google Home app

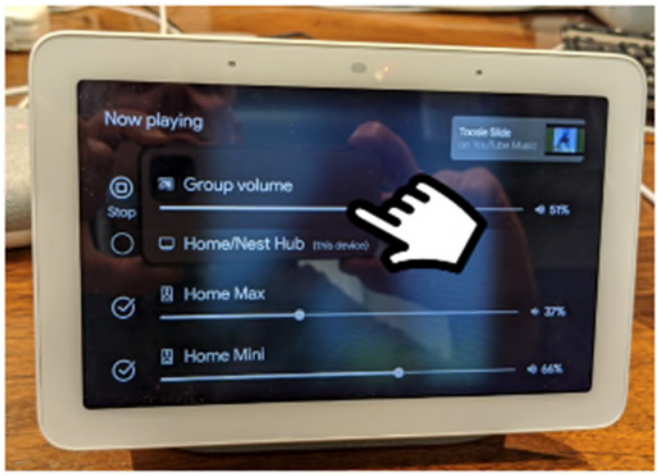
Claim 1	Google
	   

Claim 1	Google
	  YouTube Music app

Claim 1	Google
	 Google Play Music app

Claim 1	Google
	 Hub Audio Player

Claim 1	Google
	  

Claim 1	Google
	 *See also, e.g.*, Ex. 55 ("When casting to a group, there are two ways to change the volume: 1. Changing the **group volume**. This action will change the volume of all speakers within the group.") (emphasis in original); Ex. 84.

262. Additionally and/or alternatively, Google has indirectly infringed and have continued to indirectly infringe up to the date of expiration of the '949 Patent one or more claims of the '949 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe one or more claims of the '949 Patent. In particular, (a) Google had actual knowledge of the '949 Patent or was willfully blind to its existence prior to (at least as early as September 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally caused, urged, or encouraged users of the Google Wireless Audio System to directly infringe one or more claims of the '949 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses thereof, including infringing uses (*see* Exs. 29, 34-39, 55), (c) Google knew (or should have known) that its actions would induce users of the Google Wireless Audio System to directly infringe one or more claims the '949 Patent, and (d) users of the Google Wireless Audio System directly infringed one or more claims

of the ’949 Patent. For instance, at a minimum, Google has supplied the Google Apps to customers while knowing that installation and/or use of the Google Apps would infringe one or more claims of the ’949 Patent and that Google’s customers then directly infringed one or more claims of the ’949 Patent by installing and/or using the Google Apps in accordance with Google’s product literature. *See, e.g.*, *id*.

263. As another example, Google has supplied Hub Audio Players to customers while knowing that use of these products would infringe one or more claims of the ’949 Patent and that Google’s customers then directly infringed one or more claims of the ’949 Patent by using these Hub Audio Players in accordance with Google’s product literature. *See, e.g.*, Exs. 29, 84.

264. Additionally and/or alternatively, Google has indirectly infringed and continued to indirectly infringe up to the date of expiration of the ’949 Patent one or more of the claims of the ’949 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the Google Wireless Audio System that contributed to the direct infringement of the ’949 Patent by users of the Google Wireless Audio System. In particular, (a) Google had actual knowledge of the ’949 Patent or was willfully blind to its existence prior to (at least as early as September 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google offered for sale, sold, and/or imported, in connection with the Google Wireless Audio System, one or more material components of the invention of the ’949 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Google knew (or should have known) that such component(s) were especially made or especially adapted for use in an infringement of the ’949 Patent, and (d) users of devices that comprise such material component(s) directly infringed one or more claims of the ’949 Patent. For instance, at a minimum, Google offered for sale, sold, and/or imported the

Google Apps for installation on devices (*e.g.*, smartphones, tablets, and computers) that meet one or more claims of the '949 Patent. *See, e.g.*, Exs. 29, 34-39, 55. The Google Apps are material components of the devices that meet the one or more claims of the '949 Patent. Further, Google especially made and/or adapted the Google Apps for use in devices that meet the one or more claims of the '949 Patent, and the Google Apps are not a staple article of commerce suitable for substantial noninfringing use. Google's customers then directly infringed the one or more claims of the '949 Patent by installing and/or using the Google Apps on the customers' devices.

265. As another example, Google offered for sale, sold, and/or imported software updates for Hub Audio Players that meet one or more claims of the '949 Patent. *See, e.g.*, Exs. 29, 84, 85. These software updates are material components of the Hub Audio Players that meet the one or more claims of the '949 Patent. Further, Google especially made and/or adapted these software updates for use in the Hub Audio Players that meet the one or more claims of the '949 Patent, and these software updates are not staple articles of commerce suitable for substantial noninfringing use. Google's customers then directly infringed the one or more claims of the '949 Patent by installing and using software updates on the Hub Audio Players.

266. Google's infringement of the '949 Patent was also willful because Google (a) had actual knowledge of the '949 Patent or was willfully blind to its existence prior to (at least as early as October 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) engaged in the aforementioned activity despite an objectively high likelihood that Google's actions constituted infringement of the '949 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Google.

267. Additional allegations regarding Google's pre-suit knowledge of the '949 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

268. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '949 Patent.

269. Sonos is entitled to recover from Google all damages that Sonos has sustained as a result of Google's infringement of the '949 Patent, including, without limitation, a reasonable royalty and lost profits.

270. Google's infringement of the '949 Patent was willful and deliberate, entitling Sonos to enhanced damages.

271. Google's infringement of the '949 Patent was exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT III: INFRINGEMENT OF U.S. PATENT NO. 9,195,258

272. Sonos incorporates by reference and re-alleges paragraphs 85-93 and 126-42 of this Second Amended Complaint as if fully set forth herein.

273. Google and/or users of the Google Wireless Audio System have directly infringed (either literally or under the doctrine of equivalents) and have continued to directly infringe up to the date of expiration of the '258 Patent one or more of the claims of the '258 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Google Wireless Audio System within the United States and/or importing the Google Wireless Audio System into the United States without authority or license.

274. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 17 of the '258 Patent in connection with the Google Wireless Audio System. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for

example, on the basis of information about the Google Wireless Audio System that it obtains during discovery.

Claim 17	Google
17. A first zone player comprising:	At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a "zone player," as recited in claim 17. At least each smartphone, tablet, and computer installed with the Google Home app, the YouTube Music app, the Google Play Music app, and/or other Chromecast-enabled apps (*e.g.*, Spotify) (where a computing device installed with at least one of these apps is referred to herein as a "Chromecast-enabled computing device") comprises a "controller," as recited in claim 17.
a network interface configured to interface the first zone player with at least a local area network (LAN);	Each of the foregoing Google Audio Players includes a network interface configured to interface the Google Audio Player with at least a LAN, such as a Wi-Fi interface. *See, e.g.*, Exs. 68, 95-98, 111-113.
a device clock configured to generate clock time information for the first zone player;	Each of the foregoing Google Audio Players includes a device clock configured to generate clock time information for the Google Audio Player. *See, e.g.*, Exs. 68, 95-98, 111-113.
one or more processors; and	Each of the foregoing Google Audio Players includes one or more processors. *See*, *e.g.*, Exs. 68, 95-98, 111-113.
a tangible, non-transitory computer-readable memory having instructions stored thereon that, when executed by the one or more processors, cause the first zone player to:	Each of the foregoing Google Audio Players includes a tangible, non-transitory computer-readable memory comprising executable program instructions that enable a Google Audio Player to perform the functions identified below. *See*, *e.g.*, Exs. 68, 85, 95-98, 111-113.

Claim 17	Google
receive control information from any one of a plurality of controllers over the LAN via the network interface, wherein the received control information comprises a direction for the first zone player to enter into a synchrony group with at least a second zone player;	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's one or more processors, cause that Google Audio Player to receive control information from any one of a plurality of Chromecast-enabled computing devices over the LAN via the network interface, where the received control information comprises a direction for the first Google Audio Player to enter into a synchrony group with at least a second Google Audio Player. For instance, each of the foregoing Google Audio Players is programmed with the capability to receive over a local Wi-Fi network (which is a LAN), from any of a plurality of Chromecast-enabled computing devices, a direction to enter into a group of two or more Google Audio Players that are configured to play back audio in synchrony with one another. *See e.g.*, Ex. 29 ("Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream."); Exs. 30, 69, 94, 99, 104, 106.
in response to the direction, enter into the synchrony group with the second zone player,	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's one or more processors, cause that Google Audio Player to, in response to the direction, enter into the synchrony group with the second Google Audio Player. For instance, each of the foregoing Google Audio Players is programmed such that, in response to receiving a direction to enter into a group of Google Audio Players, the Google Audio Player functions to enter into the group with the one or more other Google Audio Players. *See e.g.*, Exs. 29, 30, 69, 94, 99, 104. In such a group, a first Google Audio Player is designated to serve as the "master" of the group

Claim 17	Google
	(sometimes referred to by Google as the "leader" of the group), and any other Google Audio Player in the group is designated to serve as a "slave" of the group.
wherein in the synchrony group, the first and second zone players are configured to playback audio in synchrony based at least in part on (i) audio content, (ii) playback timing information associated with the audio content, wherein the playback timing information is generated by one of the first or second zone players, and (iii) clock time information for the one of the first or second zone players, and wherein the generated playback timing information and the clock time information are transmitted from the one of the first or second zone players to the other of the first or second zone players, wherein the first and second zone players remain independently clocked while playing back audio in synchrony; and	Once grouped, the first and second Google Audio Players are configured to play back audio in synchrony based at least in part on (i) audio content, (ii) playback timing information associated with the audio content that is generated by the first Google Audio Player that is designated to serve as the "master" of the group, and (iii) clock time information for the first Google Audio Player, where the generated playback timing information and the clock time information are transmitted from the first Google Audio Player to the second Google Audio Player that is designated to serve as a "slave" of the group, and where the Google Audio Players in the group remain independently clocked while playing back audio in synchrony. For instance, Google states that once its Google Audio Players have been grouped, those audio players are configured to play audio in synchrony. *See, e.g.*, Ex. 29 ("Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home."); *see also, e.g.*, Exs. 69, 99, 106. Further, while in a group, a first Google Audio Player that is designated to serve as the "master"/"leader" of the group receives audio content from an audio source (*e.g.*, an Internet-based audio source), and then the first Google Audio Player and a second Google Audio Player that is designated to serve as a "slave" of the group are each configured play back audio in synchrony based on the audio content, playback timing information associated with the audio content and generated by the first Google Audio Player, and clock time information for the first Google Audio Player, all of which is sent from the first Google Audio Player to the second Google Audio Player via data packets –

Claim 17	Google
	including but not limited to 62-byte UDP packets, 476-byte UDP packets, and/or encrypted TCP packets sent via port 10001. Further yet, while playing back audio in synchrony, each of the first and second Google Audio Players in the group continues to operate in accordance with its own respective clock.
transmit status information to at least one of the plurality of controllers over the LAN via the network interface, wherein the status information comprises an indication of a status of the synchrony group.	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's one or more processors, cause that Google Audio Player to transmit status information to at least one of the plurality of Chromecast-enabled computing devices over the LAN via the network interface, where the status information comprises an indication of a status of the synchrony group. For instance, while in a group, each Google Audio Player in the group (including the Google Audio Player that is designated to serve as the "master" of the group) functions to send status information to any Chromecast-enabled computing device on the same local Wi-Fi network as the Google Audio Players in the group (*e.g.*, via MDNS packets) that provides an indication of a status of the group, including but not limited to status information that provides an identification of a name of the group, an identification of an "elected leader" of the group, and/or an identification of the group members. *See also, e.g.*, Ex. 100 ("GCKMultizoneStatus Class" providing "[t]he status of a multizone group" including "[t]he member devices of the multizone group.").

275. Additionally and/or alternatively, Google has indirectly infringed and continued to indirectly infringe up to the date of expiration of the '258 Patent one or more of the claims of the '258 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the '258 Patent. In particular, (a) Google had actual knowledge of the '258 Patent or was willfully blind to its existence prior to (at

least as early as September 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the '258 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses of the system, including infringing uses (*see* Exs. 20, 29, 60, 61), (c) Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the '258 Patent, and (d) users of the Google Wireless Audio System directly infringe one or more claims of the '258 Patent. For instance, at a minimum, Google has supplied and continues to supply Google Audio Players to customers while knowing that use of these products will infringe one or more claims of the '258 Patent and that Google's customers then directly infringe one or more claims of the '258 Patent by using these Google Audio Players in accordance with Google's product literature. *See, e.g.*, *id*.

276. Additionally and/or alternatively, Google has indirectly infringed and continued to indirectly infringe up to the date of expiration of the '258 Patent one or more of the claims of the '258 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the Google Wireless Audio System that contribute to the direct infringement of the '258 Patent by users of the Google Wireless Audio System. In particular, (a) Google had actual knowledge of the '258 Patent or was willfully blind to its existence prior to (at least as early as October 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google offers for sale, sells, and/or imports, in connection with the Google Wireless Audio System, one or more material components of the invention of the '258 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Google knows (or should know) that such

component(s) were especially made or especially adapted for use in an infringement of the '258 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the '258 Patent. For instance, at a minimum, Google offers for sale, sells, and/or imports software updates for Google Audio Players that meet one or more claims of the '258 Patent. *See, e.g.*, Ex. 20, 29, 60, 61, 85. These software updates are material components of the Google Audio Players that meet the one or more claims of the '258 Patent. Further, Google especially made and/or adapted these software updates for use in the Google Audio Players that meet the one or more claims of the '258 Patent, and these software updates are not staple articles of commerce suitable for substantial noninfringing use. Google's customers then directly infringe the one or more claims of the '258 Patent by installing and using software updates on the Google Audio Players.

277. Google's infringement of the '258 Patent is also willful because Google (a) had actual knowledge of the '258 Patent or was willfully blind to its existence prior to (at least as early as October 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) engaged in the aforementioned activity despite an objectively high likelihood that Google's actions constituted infringement of the '258 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Google.

278. Additional allegations regarding Google's pre-suit knowledge of the '258 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

279. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '258 Patent.

280. Sonos is entitled to recover from Google all damages that Sonos has sustained as a result of Google's infringement of the '258 Patent, including, without limitation, a reasonable royalty and lost profits.

281. Google's infringement of the '258 Patent was and continued to be willful and deliberate, entitling Sonos to enhanced damages.

282. Google's infringement of the '258 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT IV: INFRINGEMENT OF U.S. PATENT NO. 9,219,959

283. Sonos incorporates by reference and re-alleges paragraphs 85-93 and 143-161 of this Second Amended Complaint as if fully set forth herein.

284. Google and/or users of the Google Wireless Audio System have directly infringed (either literally or under the doctrine of equivalents) and continued to directly infringe one or more of the claims of the '959 Patent up to the date that Google pushed a firmware update removing the functionality identified below, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Google Wireless Audio System within the United States and/or importing the Google Wireless Audio System into the United States without authority or license.

285. As just one non-limiting example, set forth below is an infringement claim chart of exemplary claim 10 of the '959 Patent in connection with the Google Wireless Audio System. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the Google Wireless Audio System that it obtains during discovery.

Claim 10	Google
10. A playback device configured to	At least each Google Home Max and Nest Audio comprises a "playback device configured to output audio

Claim 10	Google
output audio in a multi-channel listening environment, the playback device comprising:	in a multi-channel listening environment," as recited in claim 10. At least each smartphone, tablet, and computer installed with the Google Home app (where a computing device installed with at least the Google Home app is referred to herein as a "Chromecast-enabled computing device") comprises a "controller," as recited in claim 10.
a network interface configured to receive audio data over a network;	Each of the foregoing Google Audio Players includes a network interface configured to receive audio data over a network, such as a Wi-Fi interface. *See, e.g.*, Ex. 96 ("802.11b/g/n/ac (2.4GHz/5Ghz) Wi-Fi for high-performance streaming"); Ex. 68 (same); Ex. 112.
a plurality of speaker drivers configured to output audio based on the audio data;	Each of the foregoing Google Audio Players includes a plurality of speaker drivers configured to output audio based on the audio data. *See, e.g.*, Ex. 68 ("Two 4.5 in (114 mm) high-excursion (+/- 11 mm) dual voice-coil woofers . . . Two 0.7 in (18 mm) custom tweeters"); Ex. 96 (same); Ex. 112.
one or more processors; and	Each of the foregoing Google Audio Players includes one or more processors. *See, e.g.*, Ex. 68 ("Processor[:] 1.5GHz 64-bit quad-core ARM® Cortex™ A53"); Ex. 96 (same); Ex. 112.
tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the instructions, when executed by the one or more processors, cause the playback device to	Each of the foregoing Google Audio Players includes tangible, non-transitory, computer-readable memory comprising executable program instructions that enable the Google Audio Player to perform the functions identified below. *See, e.g.*, Exs. 68, 96, 112.
(i) receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a Google Audio Player's one or more processors, cause the Google Audio Player to receive a signal from a controller over a network, where the signal comprises an instruction for the Google Audio Player to pair with one or more other Google Audio Players.

Claim 10	Google
pair with one or more playback devices,	For instance, each of the foregoing Google Audio Players is programmed with the capability to receive, from a Chromecast-enabled computing device over a Wi-Fi network that the Google Audio Player is connected to, an instruction to begin operating as part of a "speaker pair" configuration for "stereo sound" (also referred to by Google as a "stereo pairing") with another Google Audio Player of the same model as the Google Audio Player, which is a configuration involving two or more Google Audio Players having different playback roles. *See, e.g.*, Ex. 69 ("Pair Google Home Max speakers[:] You can pair two Google Home Max speakers (devices) for stereo sound and an immersive experience for music and casting…. Step 1. Place speakers in the best position in your room …. Step 2. Set up both Google Home Max speakers …. Step 3. Pair the speakers …. Step 4. Control the speaker pair"); Ex. 68 ("Wireless stereo pairing"); Ex. 132 ("For an immersive music and media experience, you can connect 2 speakers to set up stereo sound. Stereo sound pairing is available on Google Home, Google Nest Mini (2nd gen), Google Home Mini (1st gen), Google Home Max, and Google Nest Audio."). In a "speaker pair" configuration, one Google Audio Player has the role of playing back the left audio channel, and the other Google Audio Player has the role of playing back the right audio channel. *See, e.g.*, Ex. 69 ("Tap **Left** or **Right** to match the location of the blinking speaker ….") (emphasis in original). For example, at the time that a user inputs a request to create a given "speaker pair" via a Chromecast-enabled computing device, the Chromecast-enabled computing device transmits control packets to at least a first Google Audio Player in the given "speaker pair." On information and belief, these control packets include an instruction for the first Google Audio Player to begin operating as part of the given "speaker pair" with at least a second Google Audio Player of the same model as the first Google Audio

Claim 10	Google
	Player. *See, e.g.*, Ex. 69 ("When two speakers are paired, your Assistant lives and responds on the **left speaker**. To use your Assistant on the right speaker, unpair the speakers using the steps below. Then you can use your Assistant on both speakers.") (emphasis in original); Ex. 132.
(ii) process the audio data before the playback device outputs audio from the plurality of speaker drivers,	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a Google Audio Player's one or more processors, cause the Google Audio Player to process the audio data before the Google Audio Player outputs audio from the plurality of speaker drivers. For instance, each of the foregoing Google Audio Players is programmed with the capability to perform various types of audio processing on received audio data before outputting audio based on that audio data, examples of which may include digital-to-analog conversion, decompression, decryption, etc. *See, e.g.*, Ex. 96 (listing various "[s]upported [a]udio [f]ormats"); Ex. 107.
(iii) determine that a type of pairing of the playback device comprises one of at least a first type of pairing or a second type of pairing[,]	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a Google Audio Player's one or more processors, cause the Google Audio Player to determine that a type of pairing of the Google Audio Player comprises one of at least a first type of pairing or a second type of pairing. For instance, each of the foregoing Google Audio Players is programmed with the capability to operate in accordance with a particular type of pairing, such as a "no pairing" type of pairing or a "speaker pair" type of pairing. *See, e.g.*, Ex. 69 ("Pair the speakers …. Unpair speakers"); Ex. 68 ("Wireless stereo pairing"); Ex. 132. Further, each of the foregoing Google Audio Players is programmed with the capability to determine its type of pairing at various times, including but not limited to when the Google Audio Player receives an instruction to begin or stop operating as part of a "speaker pair" with another

Claim 10	Google
	Google Audio Player, when the Google Audio Player is performing certain functions in accordance with its current "pairing type," and/or when the Google Audio Player powers up. *See, e.g., id.*
(iv) configure the playback device to perform a first equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers when the type of pairing is determined to comprise the first type of pairing, and (v) configure the playback device to perform a second equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers when the type of pairing is determined to comprise the second type of pairing.	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a Google Audio Player's one or more processors, cause the Google Audio Player to configure itself to (i) perform a first equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers when the type of pairing is determined to comprise the first type of pairing and (ii) perform a second equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers when the type of pairing is determined to comprise the second type of pairing. For instance, each of the foregoing Google Audio Players is programmed with the capability to change its equalization when its type of pairing changes from one of the aforementioned types of pairing to another of the aforementioned types of pairing. *See, e.g.*, Ex. 69 ("Pair the speakers …. Unpair speakers"); Ex. 132. As one example to illustrate, as discussed above, each of the foregoing Google Audio Players is programmed with the capability to operate in accordance with either a "no pairing" type of pairing or a "speaker pair" type of pairing. When operating in accordance with a "no pairing" type of pairing, a Google Audio Player is configured to perform a first equalization of audio data that is specific to the "no pairing" type of pairing, which at least involves using a first set of bass and/or treble settings as specified in the Google Audio Player's "Equalizer" setting tab of the Google Home app. *See, e.g.*, Ex. 133. On the other hand, when operating in accordance with a "speaker pair" type of pairing, a Google Audio Player designated a "follower" of the "speaker pair" is configured to perform a second equalization of audio data that is specific to the "speaker pair" type of pairing, which at

Claim 10	Google
	least involves using a second set of bass and/or treble settings that match those settings of the Google Audio Player designated the "leader" of the "speaker pair." *See, e.g.*, Ex. 134, p.101-103.

286. Additionally and/or alternatively, Google has indirectly infringed and continued to indirectly infringe one or more of the claims of the '959 Patent up to the date that Google pushed a firmware update removing the functionality identified below, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the '959 Patent. In particular, (a) Google had actual knowledge of the '959 Patent or was willfully blind to its existence prior to (at least as early as October 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally caused, urged, or encouraged users of the Google Wireless Audio System to directly infringe one or more claims of the '959 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses of the system, including infringing uses (*see* Exs. 67-70, Ex. 132), (c) Google knew (or should have known) that its actions would induce users of the Google Wireless Audio System to directly infringe one or more claims the '959 Patent, and (d) users of the Google Wireless Audio System directly infringed one or more claims of the '959 Patent. For instance, at a minimum, Google has supplied the Google Home Max and Nest Audio to customers while knowing that use of these products would infringe one or more claims of the '959 Patent and that Google's customers then directly infringed one or more claims of the '959 Patent by using these Google Audio Players in accordance with Google's product literature. *See, e.g., id*.

287. Additionally and/or alternatively, Google has indirectly infringed and continued to indirectly infringe one or more of the claims of the '959 Patent up to the date that Google pushed a firmware update removing the functionality identified below, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the Google Wireless Audio System that contributed to the direct infringement of the '959 Patent by users of the Google Wireless Audio System. In particular, (a) Google had actual knowledge of the '959 Patent or was willfully blind to its existence prior to (at least as early as October 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google offered for sale, sold, and/or imported, in connection with the Google Wireless Audio System, one or more material components of the invention of the '959 Patent that were not staple articles of commerce suitable for substantial noninfringing use, (c) Google knew (or should have known) that such component(s) were especially made or especially adapted for use in an infringement of the '959 Patent, and (d) users of devices that comprise such material component(s) directly infringed one or more claims of the '959 Patent. For instance, at a minimum, Google offered for sale, sold, and/or imported software updates for the Google Home Max and Nest Audio that met one or more claims of the '959 Patent. *See*, *e.g.*, Exs. 67-70, 85. These software updates were material components of these Google Audio Players that met the one or more claims of the '959 Patent. Further, Google especially made and/or adapted these software updates for use in the Google Audio Players that met the one or more claims of the '959 Patent, and these software updates were not staple articles of commerce suitable for substantial noninfringing use. Google's customers then directly infringed the one or more claims of the '959 Patent by installing and using software updates on the Google Audio Players.

288. Google's infringement of the '959 Patent was also willful because Google (a) had actual knowledge of the '959 Patent or was willfully blind to its existence prior to (at least as early as October 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) engaged in the aforementioned activity despite an objectively high likelihood that Google's actions constituted infringement of the '959 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Google.

289. Additional allegations regarding Google's pre-suit knowledge of the '959 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

290. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '959 Patent.

291. Sonos is entitled to recover from Google all damages that Sonos has sustained as a result of Google's infringement of the '959 Patent, including, without limitation, a reasonable royalty and lost profits.

292. Google's infringement of the '959 Patent was and continued to be willful and deliberate, entitling Sonos to enhanced damages.

293. Google's infringement of the '959 Patent was exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT V: INFRINGEMENT OF U.S. PATENT NO. 10,031,715

294. Sonos incorporates by reference and re-alleges paragraphs 85-93 and 162-73 of this Second Amended Complaint as if fully set forth herein.

295. Google and/or users of the Google Wireless Audio System have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '715 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling

the Google Wireless Audio System within the United States and/or importing the Google Wireless Audio System into the United States without authority or license.

296. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 7 of the '715 Patent in connection with the Google Wireless Audio System. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the Google Wireless Audio System that it obtains during discovery.

Claim 7	Google
7. A first zone player comprising:	At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a "zone player," as recited in claim 7. At least each smartphone, tablet, and computer installed with the Google Home app, the YouTube Music app, the Google Play Music app, and/or other Chromecast-enabled apps (*e.g.*, Spotify) (where a computing device installed with at least one of these apps is referred to herein as a "Chromecast-enabled computing device") comprises a "controller device," as recited in claim 7.
one or more processors;	Each of the foregoing Google Audio Players includes one or more processors. *See*, *e.g.*, Exs. 68, 95-98, 111-113.
at least one network interface; and	Each of the foregoing Google Audio Players includes at least one network interface, such as a Wi-Fi interface. *See, e.g.*, Exs. 68, 95-98, 111-113.
tangible, non-transitory computer-readable media having instructions encoded therein, wherein the instructions, when	Each of the foregoing Google Audio Players includes tangible, non-transitory computer-readable media having executable instructions encoded therein that enable a Google Audio Player to perform the functions identified below. *See*, *e.g.*, Exs. 68, 85, 95-98, 111-113.

Claim 7	Google
executed by the first zone player, cause the first zone player to perform functions comprising:	
performing a master device role for a synchrony group comprising the first zone player and a second zone player, wherein in the master device role, the first zone player is configured to control synchronous playback of audio information by both the first zone player and the second zone player in response to playback commands received from a controller device via a network interface of the first zone player;	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to perform a master device role for a synchrony group comprising the first Google Audio Player and a second Google Audio Player, where in the master device role, the first Google Audio Player is configured to control synchronous playback of audio information by both the first Google Audio Player and the second Google Audio Player in response to playback commands received from a Chromecast-enabled computing device via a network interface of the first Google Audio Player. For instance, each of the foregoing Google Audio Players is programmed with the capability to enter into a group of two or more Google Audio Players that are configured to play back audio in synchrony. *See, e.g.*, Ex. 29 ("Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream."); Exs. 30, 69, 94, 99, 104, 106. In such a group, one of the Google Audio Players will be designated to serve as the "master" of the group (sometimes referred to by Google as the "leader" of the group) and every other Google Audio Player will be designated to serve as a "slave" of the group (sometimes referred to by Google as a "follower" of the group). *See, e.g.*, Ex. 122, 1277:10-13, 1278:1-6.

Claim 7	Google
	Further, each of the foregoing Google Audio Players is programmed such that, while operating as a "master" of a group, the Google Audio Player is configured to control synchronous audio playback by both the "master" Google Audio Player and each "slave" Google Audio Player in the group in response to playback commands received from a Chromecast-enabled computing device on the same LAN as the Google Audio Player. *See, e.g.*, Ex. 122, 1300:6-15 ("[S]o in order to play media onto a group, one of the devices in the group has to be the leader. That will be the device that actually will launch the application that you would like to listen to, and that is what downloads the media from the internet and then distributes the audio to the rest of the devices."); *id.*, 1259:20-1260:5, 1268:23-1269:8, 1315:5-10.
while performing the master device role, evaluating one or more operational performance metrics of the one or more processors or the at least one network interface indicating potential degradation in performance of synchronous playback of audio information by both the first and second zone player, and based on the evaluation, determining that the second zone player should perform the master device role for the synchrony group;	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to, while performing a master device role, evaluate one or more operational performance metrics of the one or more processors or the at least one network interface indicating potential degradation in performance of synchronous playback of audio information by both the first and second Google Audio Players, and based on the evaluation, determine that the second Google Audio Player should perform the master device role for the synchrony group instead of the first Google Audio Player. For instance, each of the foregoing Google Audio Players is programmed such that, while operating as a "master"/"leader" of a group, the Google Audio Player is configured to (i) evaluate one or more metrics related to the performance of the synchronous audio playback by the Google Audio Players in the group, including but not limited to one or more metrics related to the wireless signal quality detected by the Google Audio Players in the group (e.g., as reflected in "SRV (Server Selection)" fields contained within MDNS packets

Claim 7	Google
	exchanged between the Google Audio Players in the group), and (ii) based on the evaluation, determine that a different Google Audio Player in the group should take over as the "master" of the group. *See also* RFC 2782. Public testimony from Google's engineers evidences this functionality. For example, as explained by Google's engineers, Google Audio Players "continuously" engage in a "leader election process" in which each player (i) broadcasts a respective "leader quality number" that "tells the other [players] in the network how good that [player] would be as a leader for the group," where the "quality is in part based on the Wi-Fi signal strength of each device," and (ii) evaluates its own leader quality relative to the respective leader quality of each other player. *See* Ex. 122, 1247:14-24, 1248:3-1249:1, 1249:20-1250:9, 1251:3-1252:9, 1253:4-23, 1300:16-1301:4. In this way, "over time," "the [player] that's chosen as the leader… may change at any time." *Id.*, 1253:19-23; *see also id.*, 1247:2-7, 1251:3-1252:9.
in response to determining that the second zone player should perform the master device role for the synchrony group, initiating migration of the master device role from the first zone player to the second zone player; and	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to, in response to a determination that a second Google Audio Player should perform the master device role for the synchrony group instead of the first Google Audio Player, initiate migration of the master device role from the first Google Audio Player to the second Google Audio Player. For instance, each of the foregoing Google Audio Players is programmed such that, after determining that one of the "slave" Google Audio Players in the group should take over the Google Audio Player's role as the "master"/"leader" of a group, the "master" Google Audio Player initiates migrating the "master" role to the one "slave" Google Audio Player.

Claim 7	Google
	Public documentation from Google evidences this functionality. For example, one of Google's patent publications related to the Google Audio Players explains that, when the "leader" role is to be migrated, the current "leader" performs a "deregistration" process so that another player can take over the "leader" role. *See, e.g.*, US20180262792, ¶52; *see also id.*, ¶51, 64. As another example, a technical document (TX6454) Google published during a jury trial (Ex. 122, 1238:10-24) states "[i]f a new, better group leader comes online, the old group leader should send a goodbye packet to indicate to the SDK that it is no longer the leader." Ex. 127, GOOG-SONOSWDTX-00048968.
after migration of the master device role from the first zone player to the second zone player, ceasing to perform the master device role for the synchrony group, and playing back audio information in synchrony with the second zone player while the second zone player is performing the master device role for the synchrony group.	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to, after migration of the master device role from the first Google Audio Player to a second Google Audio Player, cease to perform the master device role for the synchrony group and play back audio information in synchrony with the second Google Audio Player while the second Google Audio Player is performing the master device role for the synchrony group. For instance, each of the foregoing Google Audio Players is programmed such that, after migration of the "master"/"leader" role of a group, the former "master" Google Audio Player begins operating as a "slave"/"follower" of the group. In this respect, while operating as a "slave" of the group, the Google Audio Player is configured to play back audio in synchrony with the new "master" Google Audio Player in the group. Public testimony from Google's engineers evidences this functionality. For example, one of Google's engineers described scenarios in which the "leader" role of a group was migrated to a "follower" of the group and thereafter, the former "leader" transitioned to

Claim 7	Google
	operate as a "follower" of the group. *See, e.g.*, Ex. 122, 1247:13-1251:24.

297. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the '715 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the '715 Patent. In particular, (a) Google had actual knowledge of the '715 Patent or was willfully blind to its existence prior to (at least as early as February 2019), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the '715 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses of the system, including infringing uses (*see* Exs. 20, 29, 60, 61), (c) Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the '715 Patent, and (d) users of the Google Wireless Audio System directly infringe one or more claims of the '715 Patent. For instance, at a minimum, Google has supplied and continues to supply Google Audio Players to customers while knowing that use of these products will infringe one or more claims of the '715 Patent and that Google's customers then directly infringe one or more claims of the '715 Patent by using these Google Audio Players in accordance with Google's product literature. *See, e.g.*, *id*.

298. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the '715 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the Google Wireless Audio System that contribute to the direct infringement of

the ’715 Patent by users of the Google Wireless Audio System. In particular, (a) Google had actual knowledge of the ’715 Patent or was willfully blind to its existence prior to (at least as early as February 2019), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers for sale, sells, and/or imports, in connection with the Google Wireless Audio System, one or more material components of the invention of the ’715 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Google knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the ’715 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the ’715 Patent. For instance, at a minimum, Google offers for sale, sells, and/or imports software updates for Google Audio Players that meet one or more claims of the ’715 Patent. *See, e.g.*, Ex. 20, 29, 60, 61, 85. These software updates are material components of the Google Audio Players that meet the one or more claims of the ’715 Patent. Further, Google especially made and/or adapted these software updates for use in the Google Audio Players that meet the one or more claims of the ’715 Patent, and these software updates are not staple articles of commerce suitable for substantial noninfringing use. Google’s customers then directly infringe the one or more claims of the ’715 Patent by installing and using software updates on the Google Audio Players.

299. Google’s infringement of the ’715 Patent is also willful because Google (a) had actual knowledge of the ’715 Patent or was willfully blind to its existence prior to (at least as early as February 2019), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) engaged in the aforementioned activity despite an objectively high likelihood that Google’s actions constituted infringement of the ’715 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Google.

300. Additional allegations regarding Google's pre-suit knowledge of the '715 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

301. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '715 Patent.

302. Sonos is entitled to recover from Google all damages that Sonos has sustained as a result of Google's infringement of the '715 Patent, including, without limitation, a reasonable royalty and lost profits.

303. Google's infringement of the '715 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

304. Google's infringement of the '715 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

305. Google's infringement of the '715 Patent has caused irreparable harm (including the loss of market share) to Sonos and will continue to do so unless enjoined by this Court.

COUNT VI: INFRINGEMENT OF U.S. PATENT NO. 10,209,953

306. Sonos incorporates by reference and re-alleges paragraphs 85-93 and 174-86 of this Second Amended Complaint as if fully set forth herein.

307. Google and/or users of the Google Wireless Audio System have directly infringed (either literally or under the doctrine of equivalents) and continued to directly infringe up to the date of expiration of the '953 Patent one or more of the claims of the '953 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Google Wireless Audio System within the United States and/or importing the Google Wireless Audio System into the United States without authority or license.

308. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 7 of the '953 Patent in connection with the

Google Wireless Audio System. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the Google Wireless Audio System that it obtains during discovery.

Claim 7	Google
7. A first zone player comprising:	At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a "zone player," as recited in claim 7. These Google Audio Players are controlled by smartphones, tablets, and computers installed with the Google Home app, the Google Play Music app, the YouTube Music app, and/or other Chromecast-enabled apps (e.g., Spotify) (where a computing device installed with at least one of these apps is referred to herein as a "Chromecast-enabled computing device").
a network interface that is configured to provide an interconnection with at least one data network;	Each of the foregoing Google Audio Players includes a network interface that is configured to provide an interconnection with at least one data network, such as a Wi-Fi interface. *See, e.g.*, Exs. 68, 95-98, 111-113.
a clock that is configured to provide a clock time of the first zone player;	Each of the foregoing Google Audio Players includes a clock that is configured to provide a clock time of the Google Audio Player. *See, e.g.*, Exs. 68, 95-98, 111-113.
at least one processor;	Each of the foregoing Google Audio Players includes at least one processor. *See, e.g.*, Exs. 68, 95-98, 111-113.
a tangible, non-transitory computer-readable medium; and program instructions stored on the tangible, non-transitory computer-	Each of the foregoing Google Audio Players includes a tangible, non-transitory computer-readable medium comprising executable program instructions that enable a Google Audio Player to perform the functions identified below. *See, e.g.*, Exs. 68, 85, 95-98, 111-113.

Claim 7	Google
readable medium that are executable by the at least one processor to cause the first zone player to perform functions comprising:	
receiving a request to enter into a synchrony group with at least a second zone player that is communicatively coupled with the first zone player over a local area network (LAN);	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's at least one processor, cause that Google Audio Player to receive a request to enter into a synchrony group with at least a second Google Audio Player that is communicatively coupled with the first Google Audio Player over a LAN. For instance, each of the foregoing Google Audio Players is programmed with the capability to receive over a local Wi-Fi network (which is a LAN) a request to enter into a group of two or more Google Audio Players that are configured to play back audio in synchrony with one another, where such a direction is from a Chromecast-enabled computing device on the local Wi-Fi network or a Google voice-server that is communicatively coupled to the local Wi-Fi network, among other possibilities. *See e.g.*, Ex. 29 ("Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream."); Exs. 30, 69, 94, 99, 104, 106.
in response to receiving the request to enter into the synchrony group, entering into the synchrony group with the second zone player, wherein the first zone player is	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's at least one processor, cause that Google Audio Player to, in response to receiving the request to enter into the synchrony group, enter into the synchrony group with the second Google Audio Player, where the first Google Audio Player is selected to begin operating as a slave of the synchrony group and the second Google Audio Player is selected to begin

Claim 7	Google
selected to begin operating as a slave of the synchrony group and the second zone player is selected to begin operating as a master of the synchrony group, and wherein the clock time of the first zone player differs from a clock time of the second zone player;	operating as a master of the synchrony group, and where the clock time of the first Google Audio Player differs from a clock time of the second Google Audio Player. For instance, each of the foregoing Google Audio Players is programmed such that, in response to receiving a request to enter into a group of Google Audio Players, the Google Audio Player functions to enter into the group with the one or more other Google Audio Players. *See e.g.*, Exs. 29, 30, 69, 94, 99, 104, 106. In such a group, a first Google Audio Player is designated to operate as a "slave" of the group, and a second Google Audio Player is designated to operate as the "master" of the group (sometimes referred to by Google as the "leader" of the group). Moreover, the respective clock times of the first and second Google Audio Players differ.
after beginning to operate as the slave of the synchrony group:	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's at least one processor, cause that Google Audio Player to perform the following functions after beginning to operate as the slave of the synchrony group.
receiving, from the second zone player over the LAN, clock timing information that comprises at least one reading of the clock time of the second zone player; based on the received clock timing information, determining a differential between the clock time of the first zone player and	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's at least one processor, cause that Google Audio Player to, after beginning to operate as the slave of the synchrony group, (i) receive, from the second Google Audio Player over the LAN, clock timing information that comprises at least one reading of the clock time of the second Google Audio Player and (ii) based on the received clock timing information, determine a differential between the clock time of the first Google Audio Player and the clock time of the second Google Audio Player. For instance, each of the foregoing Google Audio Players is programmed such that, after beginning to operate as a "slave" of a group, the Google Audio Player

Claim 7	Google
the clock time of the second zone player;	is configured to (i) receive, from the "master" Google Audio Player of the group, clock timing information that comprises at least one reading of the clock time of the "master" player via data packets, such as 62-byte UDP packets, and (ii) based on the received clock timing information, determine a differential between its own clock time and the clock time of the "master" Google Audio Player.
receiving, from the second zone player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the first audio track;	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's at least one processor, cause that Google Audio Player to, after beginning to operate as the slave of the synchrony group, receive, from the second Google Audio Player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second Google Audio Player, at which the first and second Google Audio Players are to initiate synchronous playback of the audio information for the first audio track. For instance, each of the foregoing Google Audio Players is programmed such that, after beginning to operate as a "slave" of a group, the Google Audio Player is configured to receive, from the "master" Google Audio Player of the group, audio information for at least a first audio track and associated playback timing information that includes an indicator of a first future time, relative to the clock time of the "master" Google Audio Player, at which the Google Audio Players of the group are to initiate synchronous playback of the audio information for the first audio track, where such information is received via various types of data packets sent by the "master" Google Audio Player – including but not limited to 476-byte UDP packets and/or encrypted TCP packets sent via port 10001. *See also, e.g.*, Ex. 29; Ex. 69, 99, 106.

Claim 7	Google
updating the first future time to account for the determined differential between the clock time of the first zone player and the clock time of the second zone player; and when the clock time of the first zone player reaches the updated first future time, initiating synchronous playback of the received audio information with the second zone player.	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's at least one processor, cause that Google Audio Player to, after beginning to operate as the slave of the synchrony group, (i) update the first future time to account for the determined differential between the clock time of the first Google Audio Player and the clock time of the second Google Audio Player and (ii) when the clock time of the first Google Audio Player reaches the updated first future time, initiate synchronous playback of the received audio information with the second Google Audio Player. For instance, each of the foregoing Google Audio Players is programmed such that, after beginning to operate as a "slave" of a group, the Google Audio Player is configured to (i) update a first future time of playback timing information received from the "master" Google Audio Player of the group to account for a determined differential between the "slave" Google Audio Player's own clock time and clock time of the "master" Google Audio Player and (ii) when the clock time of the "slave" Google Audio Player reaches the updated first future time, initiate synchronous playback of the received audio information with the "master" Google Audio Player. *See, e.g.*, Ex. 29; Ex. 69, 99, 106.

309. Additionally and/or alternatively, Google has indirectly infringed and continued to indirectly infringe up to the date of expiration of the '953 Patent one or more of the claims of the '953 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the '953 Patent. In particular, (a) Google had actual knowledge of the '953 Patent or was willfully blind to its existence prior to (at least as early as February 2019), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or

more claims of the ’953 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses of the system, including infringing uses (*see* Exs. 20, 29, 60, 61), (c) Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the ’953 Patent, and (d) users of the Google Wireless Audio System directly infringe one or more claims of the ’953 Patent. For instance, at a minimum, Google has supplied and continues to supply Google Audio Players to customers while knowing that use of these products will infringe one or more claims of the ’953 Patent, and that Google’s customers then directly infringe one or more claims of the ’953 Patent by using these Google Audio Players in accordance with Google’s product literature. *See, e.g.*, *id*.

310. Additionally and/or alternatively, Google has indirectly infringed and continued to indirectly infringe up to the date of expiration of the ’953 Patent one or more of the claims of the ’953 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the Google Wireless Audio System that contribute to the direct infringement of the ’953 Patent by users of the Google Wireless Audio System. In particular, (a) Google had actual knowledge of the ’953 Patent or was willfully blind to its existence prior to (at least as early as February 2019), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google offers for sale, sells, and/or imports, in connection with the Google Wireless Audio System, one or more material components of the invention of the ’953 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Google knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the ’953 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the ’953 Patent.

For instance, at a minimum, Google offers for sale, sells, and/or imports software updates for Google Audio Players that meet one or more claims of the '953 Patent. *See, e.g.*, Exs. 20, 29, 60, 61, 85. These software updates are material components of the Google Audio Players that meet the one or more claims of the '953 Patent. Further, Google especially made and/or adapted these software updates for use in the Google Audio Players that meet the one or more claims of the '953 Patent, and these software updates are not staple articles of commerce suitable for substantial noninfringing use. Google's customers then directly infringe the one or more claims of the '953 Patent by installing and using software updates on the Google Audio Players.

311. Google's infringement of the '953 Patent is also willful because Google (a) had actual knowledge of the '953 Patent or was willfully blind to its existence prior to (at least as early as February 2019), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) engaged in the aforementioned activity despite an objectively high likelihood that Google's actions constituted infringement of the '953 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Google.

312. Additional allegations regarding Google's pre-suit knowledge of the '953 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

313. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '953 Patent.

314. Sonos is entitled to recover from Google all damages that Sonos has sustained as a result of Google's infringement of the '953 Patent, including, without limitation, a reasonable royalty and lost profits.

315. Google's infringement of the '953 Patent was and continued to be willful and deliberate, entitling Sonos to enhanced damages.

316. Google's infringement of the '953 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT VII: INFRINGEMENT OF U.S. PATENT NO. 10,439,896

317. Sonos incorporates by reference and re-alleges paragraphs 85-93 and 187-204 of this Second Amended Complaint as if fully set forth herein.

318. Google and/or users of the Google Wireless Audio System have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '896 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Google Wireless Audio System within the United States and/or importing the Google Wireless Audio System into the United States without authority or license.

319. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 1 of the '896 Patent in connection with the Google Wireless Audio System. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the Google Wireless Audio System that it obtains during discovery.

Claim 1	Google
1. A computing device comprising:	At least each smartphone, tablet, and computer installed with the Google Home app (where a computing device installed with at least the Google Home app is referred to herein as a "Chromecast-enabled computing device"[8])

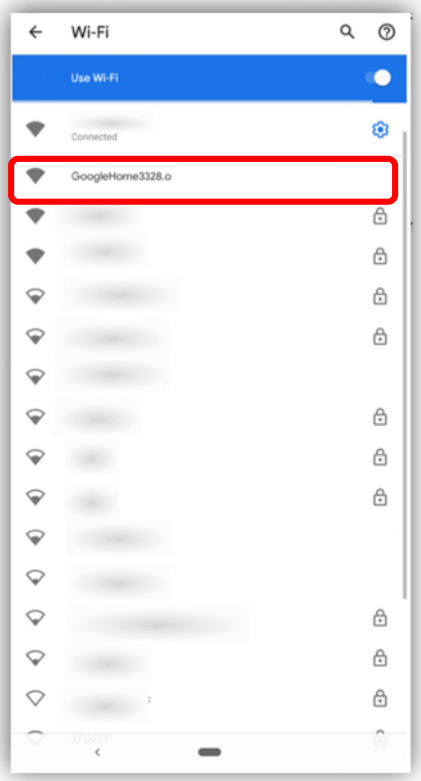
[8] Each of the Pixel 3, Pixel 3 XL, Pixel 3a, Pixel 3a XL, Pixel 4, Pixel 4 XL, Pixel 4a, Pixel 4a (5G), Pixel 5, Pixel 5a, Pixel 6, Pixel 6 Pro, Pixel 6a, Pixel 7, Pixel 7 Pro, Pixel 7a, Pixel Fold, Pixel 8, Pixel 8 Pro, Pixel 8a, Pixel 9, Pixel 9 Pro, Pixel 9 Pro XL, and Pixel 9 Pro Fold phones, the Pixel Slate and Pixel Tablet tablets, and the Pixelbook and Pixelbook Go laptops installed with an Android version of the Google Home app is an example of a "Chromecast-enabled computing device."

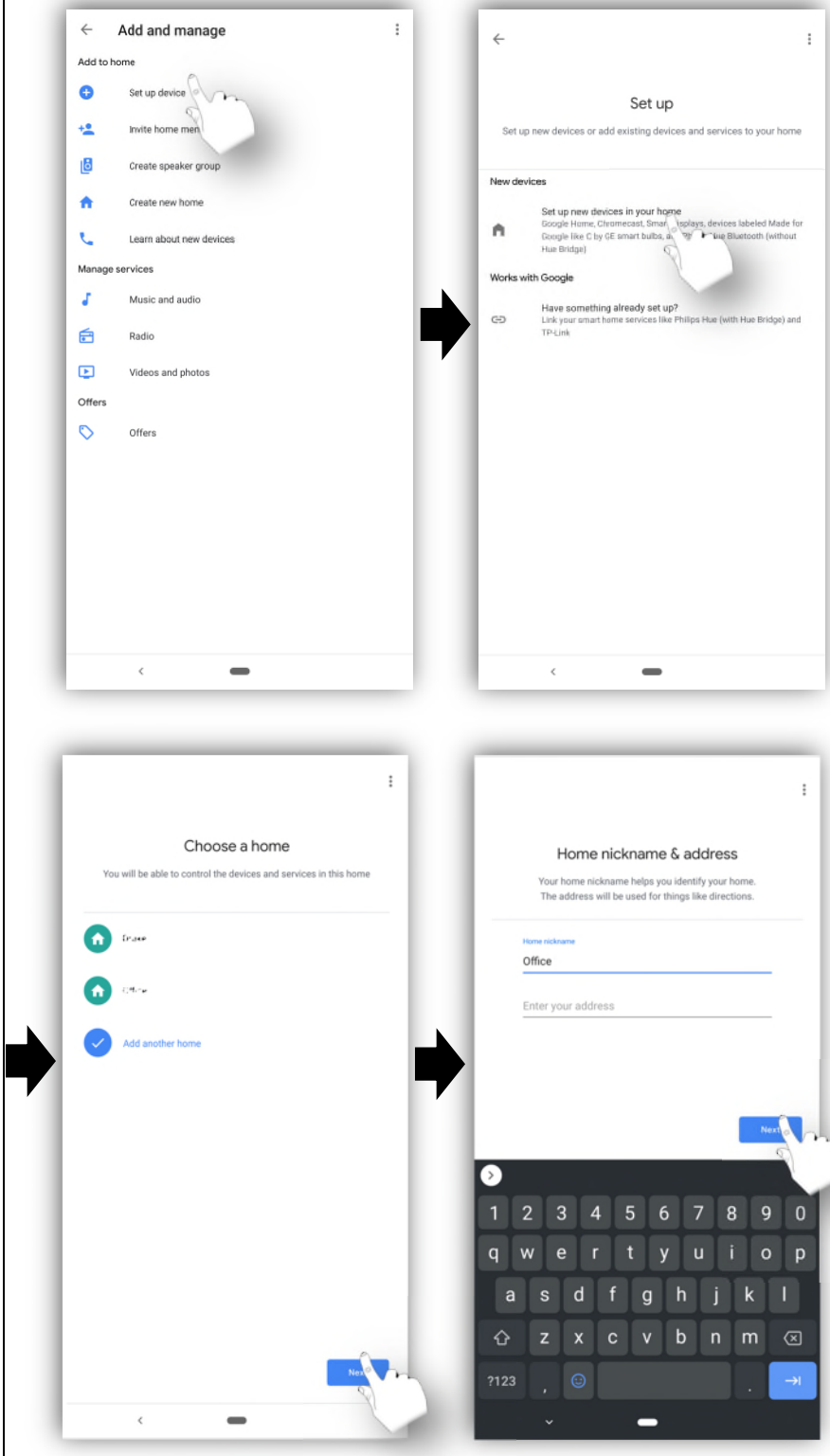
(Footnote continues on next page.)

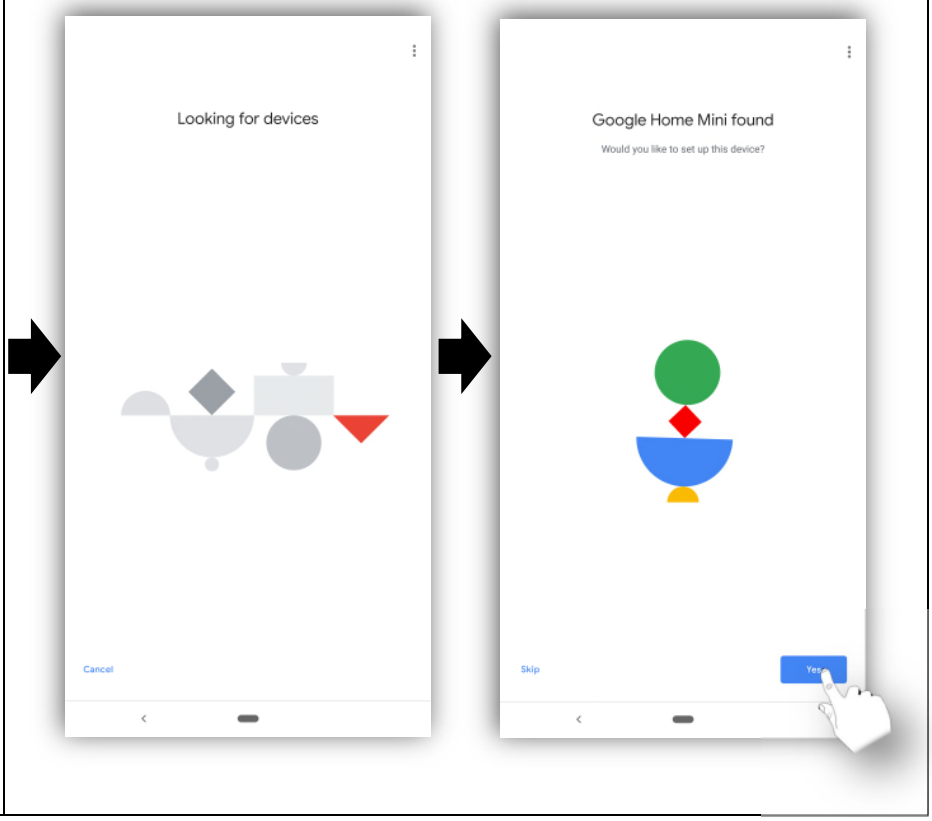
Claim 1	Google
	comprises a "computing device," as recited in claim 1. At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a "playback device," as recited in claim 1.
a user interface;	Each Chromecast-enabled computing device includes a user interface, such as a touchscreen and one or more physical buttons. *See, e.g.*, Exs. 40-43, 87-92.
a network interface;	Each Chromecast-enabled computing device includes a network interface, such as a Wi-Fi interface. *See, e.g.*, Exs. 40-43, 87-92.
at least one processor;	Each Chromecast-enabled computing device includes at least one processor. *See, e.g.*, Exs. 40-43, 87-92.
a non-transitory computer-readable medium; and program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the computing device to perform functions comprising:	Each Chromecast-enabled computing device includes a non-transitory computer-readable medium and program instructions stored on the non-transitory computer-readable medium that, when executed by the Chromecast-enabled computing device's at least one processor, cause the Chromecast-enabled computing device to perform the functions identified below. *See, e.g.*, Exs. 34, 35, 40-43, 87-92.

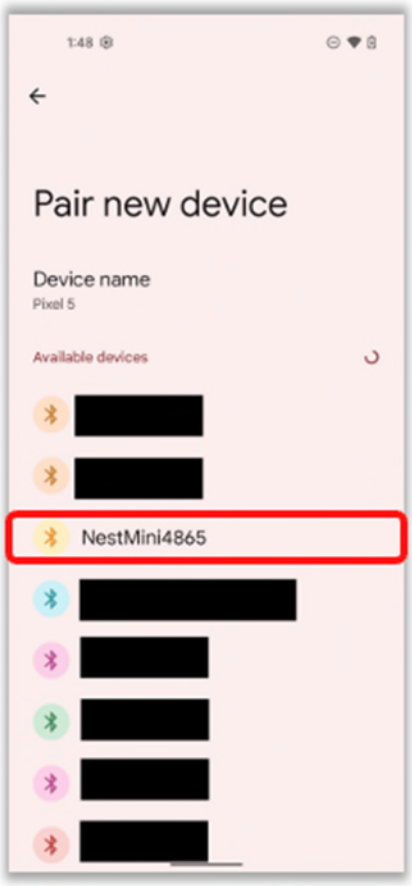
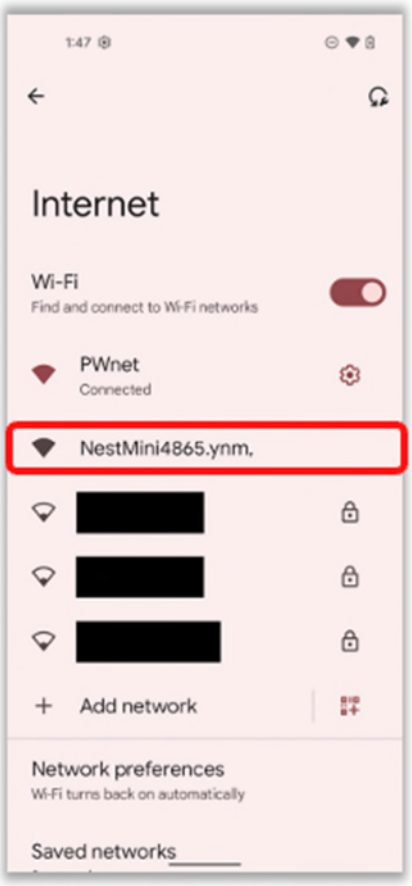
Likewise, each other smartphone, tablet, and computer installed with an Android or iOS version of the Google Home app is an example of a "Chromecast-enabled computing device," including by way of example, Apple and Samsung phones and tablets.

Claim 1	Google
while operating on a secure wireless local area network (WLAN) that is defined by an access point, (a) receiving, via a graphical user interface (GUI) associated with an application for controlling one or more playback devices, user input indicating that a user wishes to set up a playback device to operate on the secure WLAN and (b) receiving a first message indicating that a given playback device is available for setup;	Each Chromecast-enabled computing device comprises program instructions that, when executed by a Chromecast-enabled computing device's at least one processor, cause that Chromecast-enabled computing device to, while operating on a secure WLAN that is defined by an access point, (a) receive, via a GUI associated with an application for controlling one or more Google Audio Players, user input indicating that a user wishes to set up a Google Audio Player to operate on the secure WLAN and (b) receive a first message indicating that a given Google Audio Player is available for setup. For instance, each Chromecast-enabled computing device is programmed with the capability to run the Google Home app to set up and control Google Audio Players on a secure local Wi-Fi network (which is a WLAN) that is defined by an access point (*e.g.*, a router) to which the Chromecast-enabled computing device is communicatively coupled. *See*, *e.g.*, Ex. 101 ("The Google Home app will walk you through the steps to set up Google Home. . . . Choose the Wi-Fi network you want to connect to your device. . . . Access your music and movie services."); Ex. 135 ("The Google Home app will walk you through the steps to set up your Google Nest or Home speaker or display. . . . **Important:** Make sure your setup device is connected to the Wi-Fi network you want to connect your Nest speaker or display to."); Exs. 80, 102, 103, 136. In this regard, while communicatively coupled to a secure local Wi-Fi network, the Chromecast-enabled computing device is capable of receiving, via a GUI presented by the Google Home app, user input indicating that a user wishes to set up a Google Audio Player to operate on the secure local Wi-Fi network. While that Google Audio Player is operating in a setup mode (*e.g.*, after being plugged into a wall socket for the first time out of the box or after being factory reset), the Chromecast-enabled computing device functions to receive, from the Google Audio Player, a message indicating that the Google Audio Player is available for setup (*e.g.*, a Bluetooth advertisement

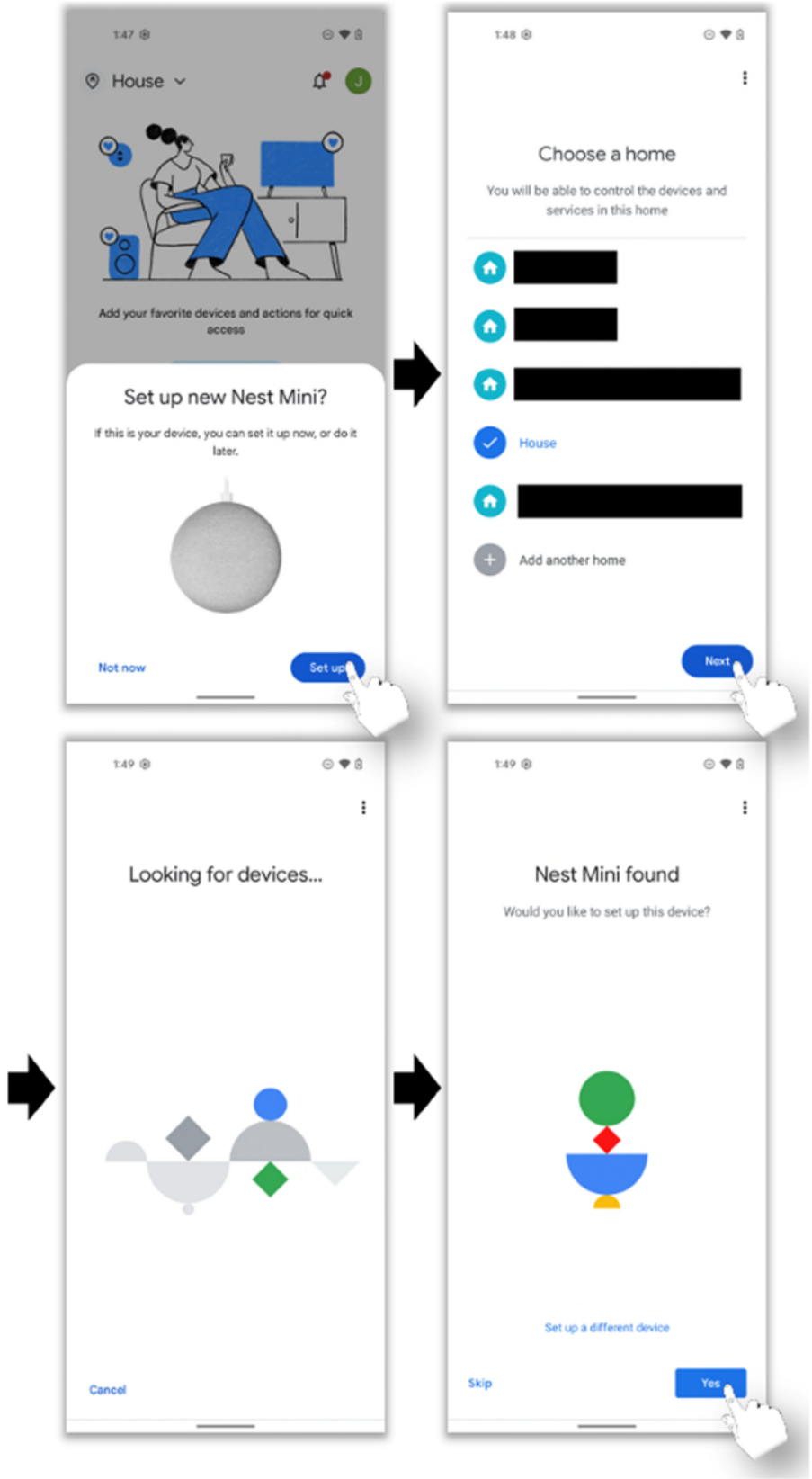
Claim 1	Google
	message or a Wi-Fi message comprising an SSID for an unsecure Wi-Fi network provided by the Google Audio Player). Examples of these functions are illustrated in the following screenshots. 

Claim 1	Google
	

Claim 1	Google
	

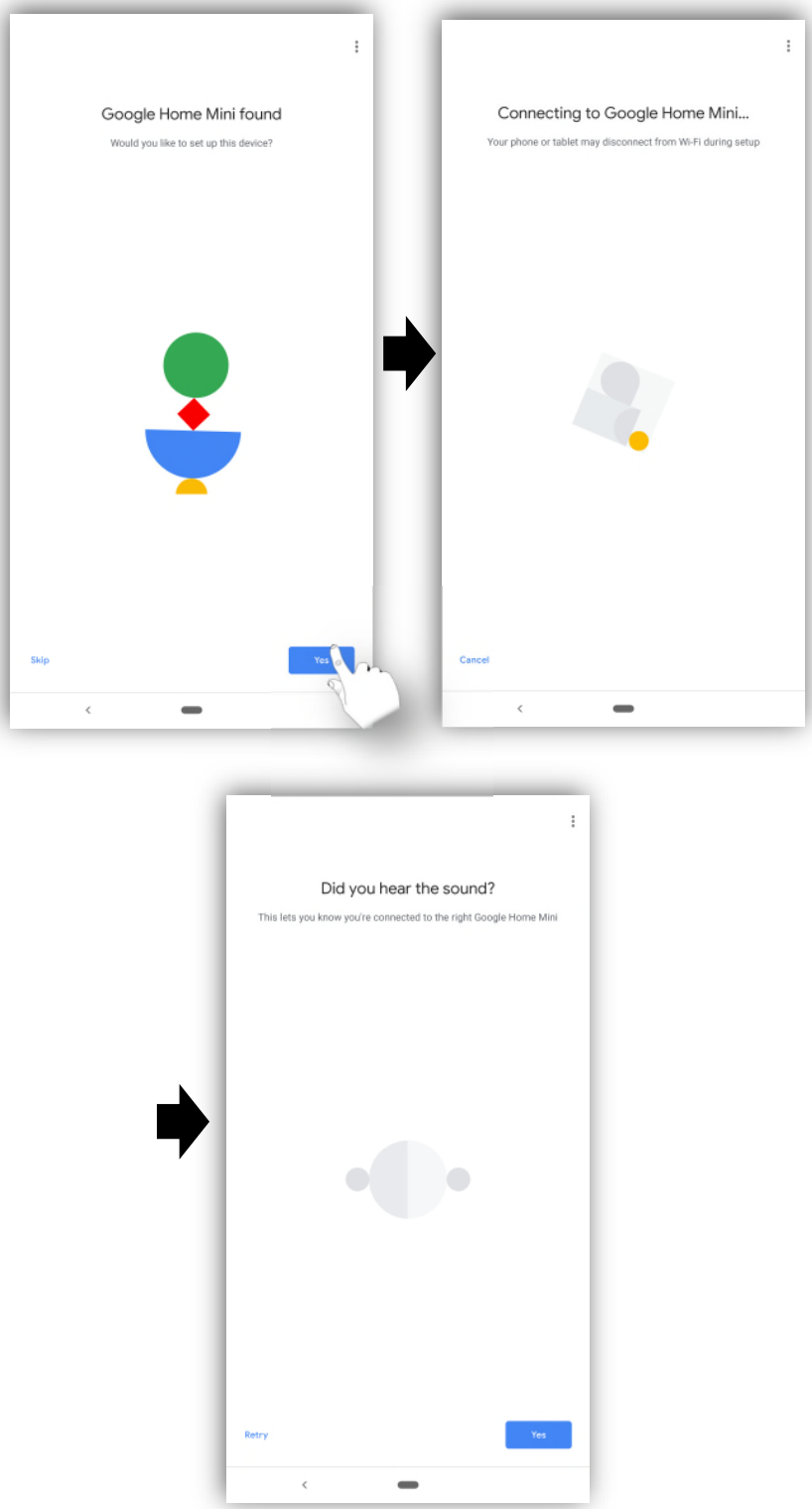
Claim 1	Google
	 

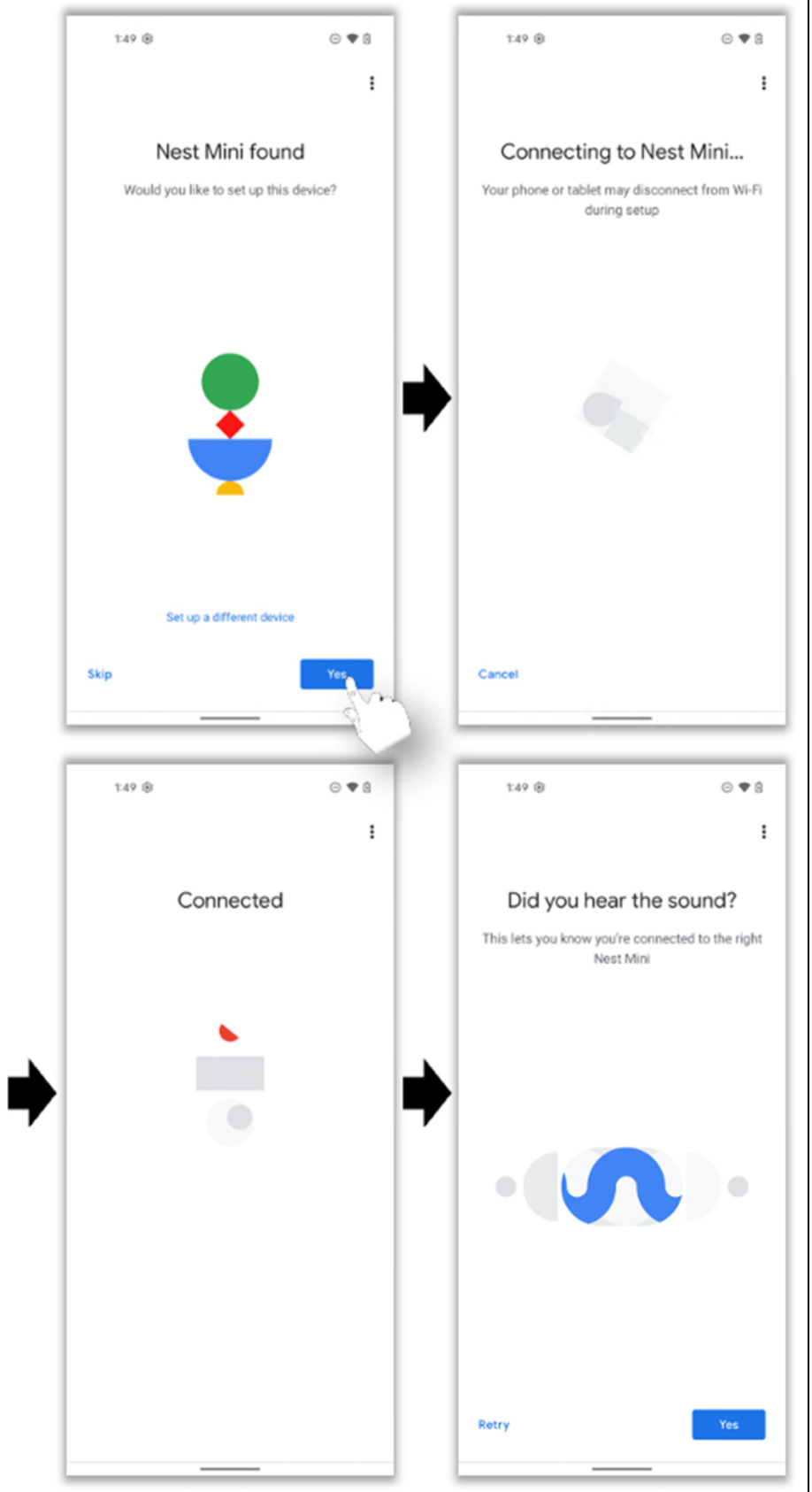
Claim 1	Google
	 

Claim 1	Google
	

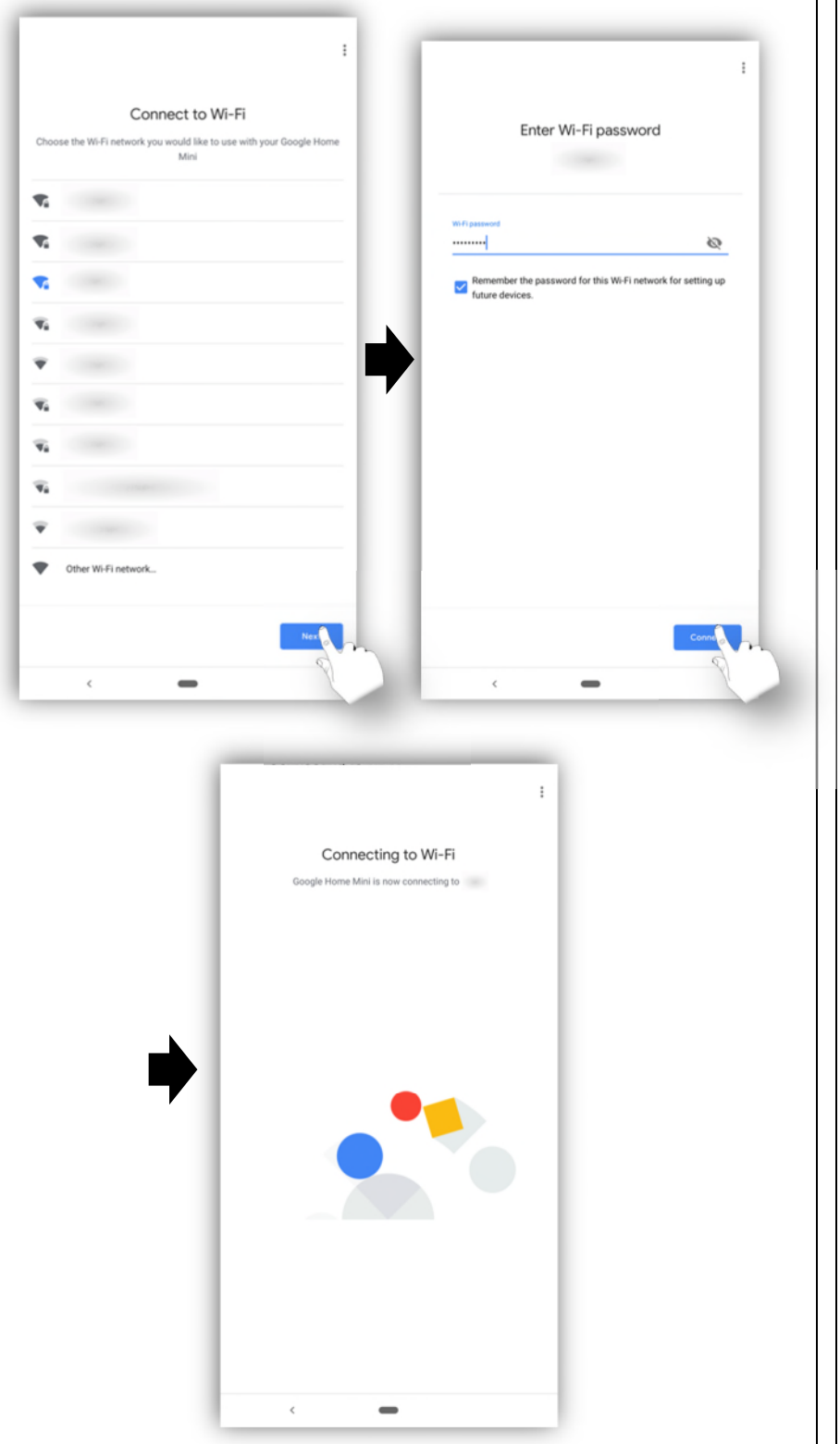
Claim 1	Google
	See also, e.g., Ex. 101 ("1. Plug in Google Home. . . . 7. Scanning for Google Home devices: The Google Home app scans for nearby devices that are plugged in and ready to set up. Tap the home you want to add the device to > Next."); Ex. 135 ("What you need to get started[:] . . . An Android phone or tablet that . . . [h]as Bluetooth turned on. . . . 1. Plug in your Nest speaker or display. •If the device has been used before, factory reset your speaker or display before you continue."); Ex. 136.
after receiving the user input and receiving the first message, transmitting a response to the first message that facilitates establishing an initial communication path with the given playback device, wherein the initial communication path with the given playback device does not traverse the access point;	Each Chromecast-enabled computing device comprises program instructions that, when executed by a Chromecast-enabled computing device's at least one processor, cause that Chromecast-enabled computing device to, after receiving the user input and receiving the first message, transmit a response to the first message that facilitates establishing an initial communication path with the given Google Audio Player, where the initial communication path with the given Google Audio Player does not traverse the access point. For instance, each Chromecast-enabled computing device is programmed such that, after receiving user input indicating that a user wishes to set up a Google Audio Player to operate on a secure local Wi-Fi network defined by an access point and a message indicating that the Google Audio Player is available for setup, the Chromecast-enabled computing device functions to transmit a response to the message that facilitates establishing an initial communication path with the Google Audio Player, where the initial communication path is established directly between the Google Audio Player and the Chromecast-enabled computing device (*e.g.*, via Bluetooth or via an unsecure Wi-Fi network provided by the Google Audio Player), as opposed to traversing the access point for the secure local Wi-Fi network. *See, e.g.*, Ex. 101 ("8. Connecting to your new device: The app will now connect your phone to your new Google Home so that you can configure it. Note: You will be prompted with the

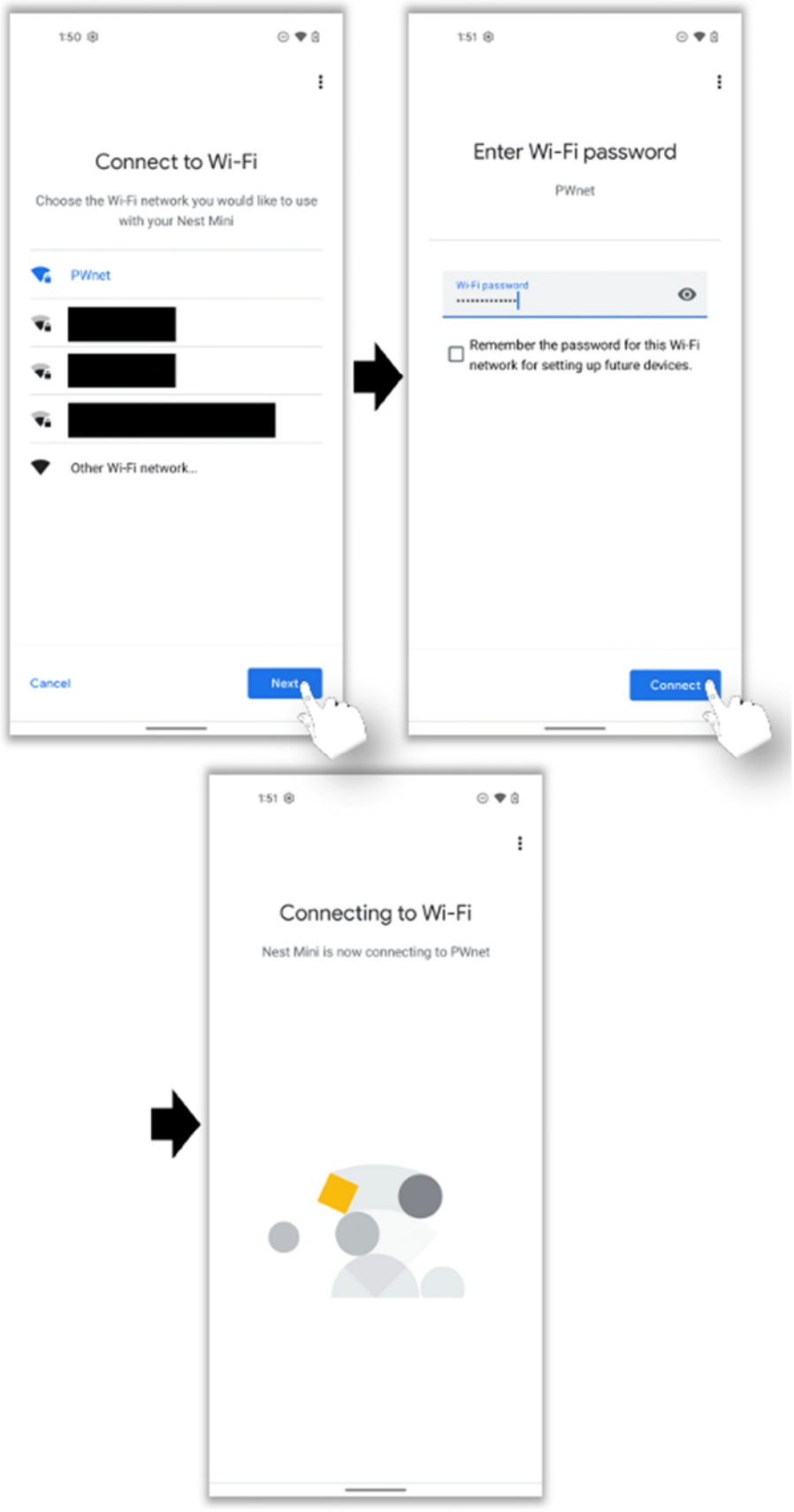
Claim 1	Google
	following notification during this step, 'Your phone may disconnect from Wi-Fi during setup'. 9. Making a connection: We'll play a sound on the device to make sure you're setting up the right device. When you hear the sound, tap Yes."); Ex. 135 ("What you need to get started[:] . . . An Android phone or tablet that . . . [h]as Bluetooth turned on."); Ex. 136. An example of this functionality is illustrated in the screenshots below.

Claim 1	Google
	

Claim 1	Google
	

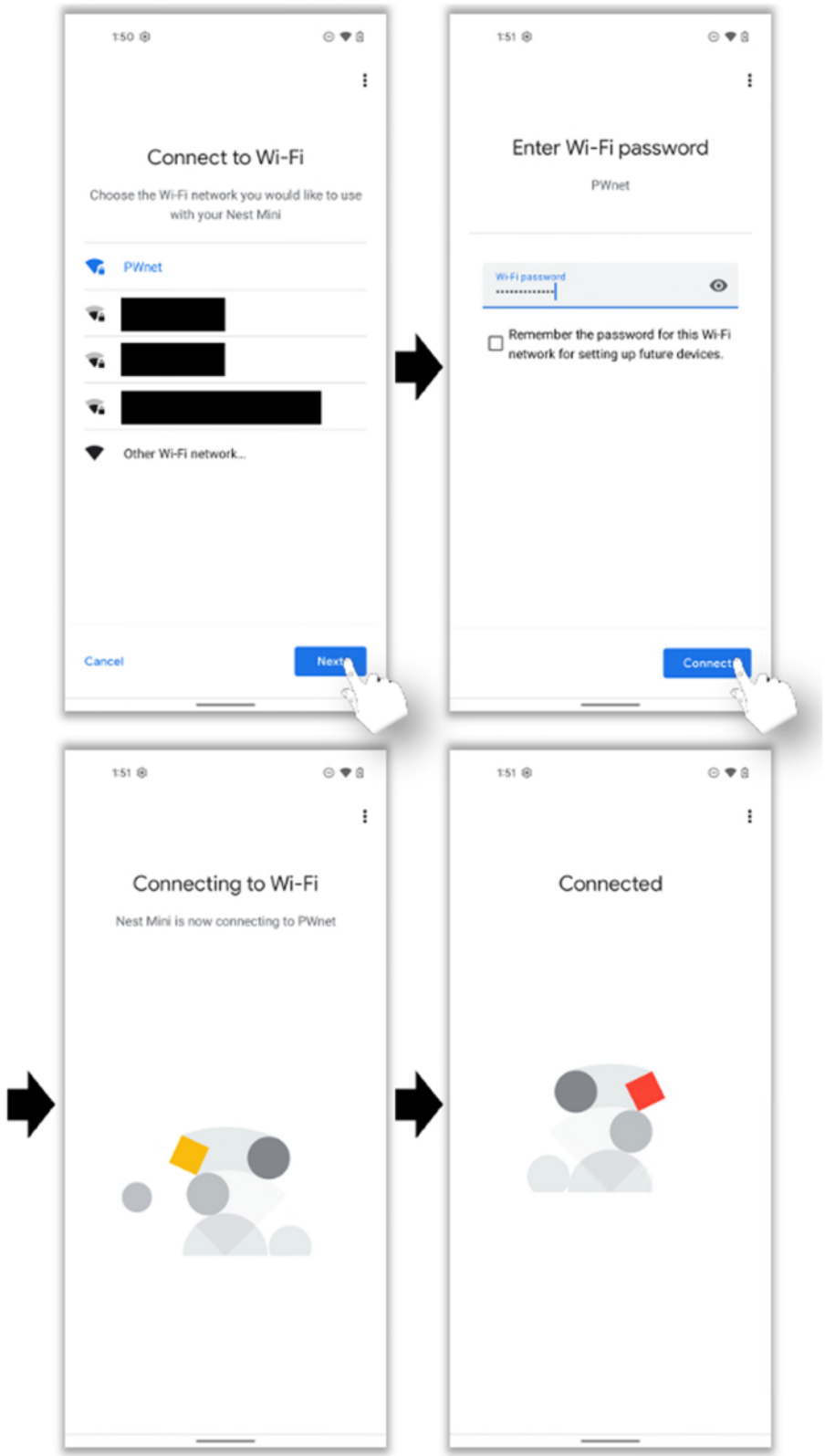
Claim 1	Google
transmitting, to the given playback device via the initial communication path, at least a second message containing network configuration parameters, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN;	Each Chromecast-enabled computing device comprises program instructions that, when executed by a Chromecast-enabled computing device's at least one processor, cause that Chromecast-enabled computing device to transmit, to the given Google Audio Player via the initial communication path, at least a second message containing network configuration parameters, where the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN. For instance, each Chromecast-enabled computing device is programmed such that, after establishing an initial communication path with a Google Audio Player that is being set up to operate on a secure local Wi-Fi network, the Chromecast-enabled computing device functions to transmit, to the Google Audio Player via the initial communication path, one or more messages containing network configuration parameters for the secure local Wi-Fi network that include an identifier of the secure local Wi-Fi network and a security key for the secure local Wi-Fi network. An example of this functionality is illustrated below.

Claim 1	Google
	


1:50
Connect to Wi-Fi
Choose the Wi-Fi network you would like to use with your Nest Mini
PWnet
[redacted]
[redacted]
[redacted]
Other Wi-Fi network...
Cancel
Next
1:51
Enter Wi-Fi password
PWnet
Wi-Fi password
Remember the password for this Wi-Fi network for setting up future devices.
Connect
1:51
Connecting to Wi-Fi
Nest Mini is now connecting to PWnet

Claim 1	Google
	See also, e.g., Ex. 101 ("13. Wi-Fi connection: Choose the Wi-Fi network you want to connect to your device. . . . Tap OK to use the password you have saved in your phone [or] [t]o manually enter the password, tap Enter manually > type in password > Connect.").
after transmitting at least the second message containing the network configuration parameters, detecting an indication that the given playback device has successfully received the network configuration parameters; and	Each Chromecast-enabled computing device comprises program instructions that, when executed by a Chromecast-enabled computing device's at least one processor, cause that Chromecast-enabled computing device to, after transmitting at least the second message containing the network configuration parameters, detect an indication that the given Google Audio Player has successfully received the network configuration parameters. For instance, each Chromecast-enabled computing device is programmed such that, after transmitting to a Google Audio Player one or more messages containing network configuration parameters for a secure local Wi-Fi network, the Chromecast-enabled computing device functions to detect an indication that the Google Audio Player successfully received the network configuration parameters. An example of this functionality is illustrated in the following screenshots.

Claim 1	Google
	

Claim 1	Google
	

Claim 1	Google
after detecting the indication, transitioning from communicating with the given playback device via the initial communication path to communicating with the given playback device via the secure WLAN that is defined by the access point.	Each Chromecast-enabled computing device comprises program instructions that, when executed by a Chromecast-enabled computing device's at least one processor, cause that Chromecast-enabled computing device to, after detecting the indication, transition from communicating with the given Google Audio Player via the initial communication path to communicating with the given Google Audio Player via the secure WLAN that is defined by the access point. For instance, each Chromecast-enabled computing device is programmed such that, after detecting an indication that a Google Audio Player successfully received network configuration parameters for a secure local Wi-Fi network defined by an access point, the Chromecast-enabled computing device functions to transition from communicating with the Google Audio Player via the initial communication path to communicating with the Google Audio Player via the secure local Wi-Fi network. *See, e.g.*, Ex. 101 ("13. Wi-Fi connection: Choose the Wi-Fi network you want to connect to your device. . . . Tap OK to use the password you have saved in your phone [or] [t]o manually enter the password, tap Enter manually > type in password > Connect."). As illustrative examples, after the Chromecast-enabled computing device transitions from communicating with the Google Audio Player via the initial communication path to communicating with the Google Audio Player via the secure local Wi-Fi network, the Chromecast-enabled computing device is capable of transmitting commands to the Google Audio Player via the secure local Wi-Fi network, such as a command for the Google Audio Player to adjust its audio volume or a command for the Google Audio Player to retrieve audio content for playback from an Internet-based music service (*e.g.*, YouTube Music, Spotify, Pandora, Google Play Music, Deezer, TuneIn, iHeartRadio, etc.) that in turn causes the Google Audio Player to retrieve the audio content from the Internet-based music service via a communication path including the

Claim 1	Google
	secure local Wi-Fi network and the Internet. *See, e.g.*, Ex. 30 ("Other ways to control music . . . From the Google Home app[:] 1. Make sure your mobile device or tablet is connected to the same Wi-Fi as your speaker or display. 2. Open the Google Home app . 3.Tap **Play music** under the name of the device that you want to use. Your device will play music from your default music provider. You can pause, resume, change volume and skip forward or backward in the song.") (emphasis in original); Ex. 101 ("Media services: Access your music and movie services. . . . Default music service: If you have more than one music service linked, you will be asked to select a Default music service: Tap the service you want to use as default > Next."); Ex. 124 ("Other ways to control music . . . You can also start and control music from the Google Home app. . . . From the Google Home app[:] 1. Make sure your mobile device or tablet is linked to the same account as your speaker or display. 2. Open the Google Home app . 3.Tap **Favorites** ♡. Tap the current media session for: •Playback controls •Volume control (media and Google Assistant) •Playback device selection"); Exs. 104, 105.

320. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the '896 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the '896 Patent. In particular, (a) Google had actual knowledge of the '896 Patent or was willfully blind to its existence prior to, and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the '896 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses thereof, including infringing uses (see Exs. 34, 35, 79, 80, 101, 135, 136), (c)

Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the '896 Patent, and (d) users of the Google Wireless Audio System directly infringe one or more claims of the '896 Patent. For instance, at a minimum, Google has supplied and continues to supply the Google Home app to customers while knowing that installation and/or use of this app will infringe one or more claims of the '896 Patent, and that Google's customers then directly infringe one or more claims of the '896 Patent by installing and/or using the Google Home app in accordance with Google's product literature. *See*, e.g., *id*.

321. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the '896 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the Google Wireless Audio System that contribute to the direct infringement of the '896 Patent by users of the Google Wireless Audio System. In particular, (a) Google had actual knowledge of the '896 Patent or was willfully blind to its existence prior to, and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google offers for sale, sells, and/or imports, in connection with the Google Wireless Audio System, one or more material components of the invention of the '896 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Google knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the '896 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the '896 Patent. For instance, at a minimum, Google offers for sale, sells, and/or imports the Google Home app for installation on devices (*e.g.*, smartphones, tablets, and computers) that meet one or more claims of the '896 Patent. *See*, *e.g.*, Ex. 34, 35, 79, 80. The Google Home app is a material component of the devices that meet

the one or more claims of the '896 Patent. Further, Google especially made and/or adapted the Google Home app for use in devices that meet the one or more claims of the '896 Patent, and this app is not a staple article of commerce suitable for substantial noninfringing use. Google's customers then directly infringe the one or more claims of the '896 Patent by installing and/or using the Google Home app on the customers' devices.

322. Google's infringement of the '896 Patent is also willful because Google (a) had actual knowledge of the '896 Patent or was willfully blind to its existence prior to, and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) engaged in the aforementioned activity despite an objectively high likelihood that Google's actions constituted infringement of the '896 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Google.

323. Additional allegations regarding Google's pre-suit knowledge of the '896 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

324. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '896 Patent.

325. Sonos is entitled to recover from Google all damages that Sonos has sustained as a result of Google's infringement of the '896 Patent, including, without limitation, a reasonable royalty and lost profits.

326. Google's infringement of the '896 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

327. Google's infringement of the '896 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

328. Google's infringement of the '896 Patent has caused irreparable harm (including the loss of market share) to Sonos and will continue to do so unless enjoined by this Court.

COUNT VIII: INFRINGEMENT OF U.S. PATENT NO. 11,080,001

329. Sonos incorporates by reference and re-alleges paragraphs 85-93 and 205-220 of this Second Amended Complaint as if fully set forth herein.

330. Google and/or users of the Google Wireless Audio System have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '001 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Google Wireless Audio System within the United States and/or importing the Google Wireless Audio System into the United States without authority or license.

331. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 12 of the '001 Patent in connection with the Google Wireless Audio System. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the Google Wireless Audio System that it obtains during discovery.

Claim 12	Google
12. A first zone player comprising:	At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a "zone player," as recited in claim 12.
a network interface that is configured to communicatively couple the first zone	Each of the foregoing Google Audio Players includes a network interface that is configured to communicatively couple a Google Audio Player to at least one data network, such as a Wi-Fi interface

Claim 12	Google
player to at least one data network;	configured to communicatively couple the Google Audio Player to a Wi-Fi network. *See, e.g.*, Exs. 68, 95-98, 111-113.
at least one processor;	Each of the foregoing Google Audio Players includes at least one processor. *See, e.g.*, Exs. 68, 95-98, 111-113.
a tangible, non-transitory computer-readable medium; and program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor such that the first zone player is configured to perform functions comprising:	Each of the foregoing Google Audio Players includes a tangible, non-transitory computer-readable medium having executable program instructions that enable a Google Audio Player to perform the functions identified below. *See, e.g.*, Exs. 68, 85, 95-98, 111-113.
receiving, via the network interface, a request to engage in synchronous playback of audio content as part of a synchrony group that includes at least a second zone player that is communicatively coupled to the first zone player via the at least one data network;	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to receive, via its network interface, a request to engage in synchronous playback of audio content as part of a synchrony group that includes at least a second Google Audio Player that is communicatively coupled to the first Google Audio Player via the at least one data network. For instance, each of the foregoing Google Audio Players is programmed with the capability to receive over a Wi-Fi network a request to engage in synchronous playback of audio content as part of a "group" that includes at least another Google Audio Player that is on the same Wi-Fi network as the Google Audio Player, where the request is from a Chromecast-enabled computing device on the Wi-Fi network or a Google cloud server that is communicatively coupled to the Wi-Fi network, among other possibilities. *See e.g.*,

Claim 12	Google
	Ex. 29 ("Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream."); Exs. 30, 69, 94, 99, 104, 106. Public testimony from Google's engineers evidences this functionality. For example, as explained by Google's engineers, Google Audio Players receive a "JoinGroup" request from a user device running the Google Home app after user input to "create a group[.]" *See, e.g.*, Ex. 122, 1245:12-25.
after receiving the request to engage in synchronous playback of audio content as part of the synchrony group: detecting an indication that the first zone player is to operate in (a) one of a control-master mode or a control-slave mode for the synchrony group and (b) one of an audio-master mode or an audio-slave mode for the synchrony group; and beginning to operate in the synchrony group in accordance with the indication;	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to, after receiving the request to engage in synchronous playback of audio content as part of the synchrony group: (i) detect an indication that the Google Audio Player is to operate in (a) one of a control-master mode or a control-slave mode for the synchrony group and (b) one of an audio-master mode or an audio-slave mode for the synchrony group and (ii) begin to operate in the synchrony group in accordance with the indication. For instance, as noted above, each of the foregoing Google Audio Players is programmed with the capability to receive a request to engage in synchronous playback of audio content as part of a "group." In such a group, one of the Google Audio Players will be designated to serve as the "master" of the group (sometimes referred to by Google as the "leader" of the group) and every other Google Audio Player will be designated to serve as a "slave" of the group (sometimes referred to by Google as a "follower" of the group). *See, e.g.*, Ex. 122, 1277:10-13, 1278:1-6. Such designations are the result of each Google Audio Player

Claim 12	Google
	of the group (i) evaluating one or more metrics related to the performance of the synchronous audio playback by the Google Audio Players in the group, including but not limited to one or more metrics related to the wireless signal quality detected by the Google Audio Players in the group (e.g., as reflected in "SRV (Server Selection)" fields contained within MDNS packets exchanged between the Google Audio Players in the group) and (ii) based on the evaluation, determining whether the Google Audio Player has the best metric(s) and should therefore operate as the "master"/"leader" of the group or otherwise, should operate as a "slave"/"follower" of the group. As discussed below, the "master"/"leader" of a group of Google Audio Players operates in the claimed "control-master mode" and "audio-master mode" and each "slave"/"follower" of the group of Google Audio Players operates in the claimed "control-slave mode" and "audio-slave mode." Each of the foregoing Google Audio Players is programmed with the capability to (i) detect an indication that the Google Audio Player is to operate as either a "master"/"leader" or a "slave"/"follower" at various times after receiving a request to engage in synchronous playback of audio content as part of a group of Google Audio Players and (ii) begin to operate in the group in accordance with the detected indication. Public testimony from Google's engineers evidences this functionality. For example, as explained by Google's engineers, Google Audio Players "continuously" engage in a "leader election process" in which each player (i) broadcasts a respective "leader quality number" that "tells the other [players] in the network how good that [player] would be as a leader for the group," where the "quality is in part based on the Wi-Fi signal strength of each device," and (ii) evaluates its own leader quality relative to the

Claim 12	Google
	respective leader quality of each other player. *See* Ex. 122, 1247:14-24, 1248:3-1249:1, 1249:20-1250:9, 1251:3-1252:9, 1253:4-23, 1300:16-1301:4. In this way, "over time," "the [player] that's chosen as the leader… may change at any time." *Id.*, 1253:19-23; *see also id.*, 1247:2-7, 1251:3-1252:9.
wherein, while operating in the control-master mode for the synchrony group, the first zone player is configured to: receive, via the network interface, first control information for the synchrony group from a network device that is communicatively coupled to the first zone player; and based on the first control information, cause, via the network interface, at least one playback action to be applied in the synchrony group;	While operating in the control-master mode for the synchrony group, a first Google Audio Player is configured to: (i) receive, via its network interface, first control information for the synchrony group from a network device that is communicatively coupled to the first Google Audio Player; and (ii) based on the first control information, cause, via its network interface, at least one playback action to be applied in the synchrony group. Each of the foregoing Google Audio Players is programmed such that, while operating as the "master" of a group, a first Google Audio Player functions to (i) receive from a Chromecast-enabled computing device on the same Wi-Fi network as the first Google Audio Player or a Google cloud server that is communicatively coupled to the Wi-Fi network, among other possibilities, control information for the group, such as control information indicating that the group should initiate playing back media, and (ii) based on such control information, transmit one or more messages to the "slave" Google Audio Player(s) via the "master" Google Audio Player's network interface that cause the "slave" Google Audio Player(s) to perform at least one playback action. *See, e.g.*, Ex. 122, 1259:20-1260:5, 1268:23-1269:8, 1300:6-15, 1315:5-10.
wherein, while operating in the control-slave mode for the synchrony group, the first zone player is configured to:	While operating in the control-slave mode for the synchrony group, a first Google Audio Player is configured to: (i) receive, via it network interface, second control information from another Google Audio Player; and (ii) perform one or more playback actions in accordance with the second control information.

Claim 12	Google
receive, via the network interface, second control information from another zone player; and perform one or more playback actions in accordance with the second control information;	Each of the foregoing Google Audio Players is programmed such that, while operating as the "slave" of a group, a first Google Audio Player functions to receive via its network interface control information from the group's "master" Google Audio Player and perform one or more playback actions (e.g., initiating playback of media) in accordance with the control information. *See, e.g.*, Ex. 122, 1259:20-1260:5, 1268:23-1269:8, 1300:6-15.
wherein, while operating in the audio-master mode for the synchrony group, the first zone player is configured to: obtain audio information that is representative of the audio content; generate playback timing information associated with the obtained audio information that is indicative of at least one future time that is relative to a reference clock time and denotes a time at which at least the first and second zone players are to engage in synchronous playback of a corresponding portion of the	While operating in the audio-master mode for the synchrony group, a first Google Audio Player is configured to: (i) obtain audio information that is representative of the audio content; (ii) generate playback timing information associated with the obtained audio information that is indicative of at least one future time that is relative to a reference clock time and denotes a time at which at least the first and second Google Audio Players are to engage in synchronous playback of a corresponding portion of the obtained audio information; and (iii) transmit, via its network interface, the obtained audio information and the generated playback timing information to the second Google Audio Player. Each of the foregoing Google Audio Players is programmed such that, while operating as the "master" of a group, a first Google Audio Player functions to obtain audio information representative of the audio content from an audio source (e.g., an Internet-based audio source) and transmits to at least one "slave" Google Audio Player the audio information and playback timing information that is (a) associated with the audio information, (b) generated by the first Google Audio Player, and (c) indicative of at least one future time that is relative to a reference clock time (e.g., the first Google Audio Player's clock time) and denotes a time at which the Google Audio Players of the group

Claim 12	Google
obtained audio information; and transmit, via the network interface, the obtained audio information and the generated playback timing information to the second zone player; and	are to engage in synchronous playback of a corresponding portion of the audio information. Public testimony from Google's engineers and public documentation evidence this functionality. For example, as explained by Google's engineers, "in order to play media onto a group, one of the devices in the group has to be the leader. That will be the device that actually will launch the application that you would like to listen to, and that is what downloads the media from the internet and then distributes the audio to the rest of the devices." Ex. 122, 1300:6-15. As another example, a technical document (TX6454) Google published during a jury trial (Ex. 122, 1238:10-24) states the "leader" is responsible for "distributing the audio stream to the follower devices," where the "audio stream would consist of audio frames with timestamps from the leader's monotonic system clock," and "the leader should designate a 'synchronous start time' where all followers that have good time sync start playing." Ex. 127, GOOG-SONOSWDTX-00048969; *see also id.*, GOOG-SONOSWDTX-00048970 ("Each [audio] packet has an associated expiry time (ie, the time that it should be played at).").
wherein, while operating in the audio-slave mode for the synchrony group, the first zone player is configured to: receive, via the network interface, audio information and playback timing information associated with the received audio information from another zone player; and	While operating in the audio-slave mode for the synchrony group, a first Google Audio Player is configured to (i) receive, via its network interface, audio information and playback timing information associated with the received audio information from another Google Audio Player; and (ii) engage in synchronous playback of the received audio information with at least the second Google Audio Player based on the received playback timing information associated with the received audio information while a local clock time of the first Google Audio Player differs from a local clock time of the second Google Audio Player. Each of the foregoing Google Audio Players is programmed such that, while operating as the "slave"

Claim 12	Google
engage in synchronous playback of the received audio information with at least the second zone player based on the received playback timing information associated with the received audio information while a local clock time of the first zone player differs from a local clock time of the second zone player.	of a group, a first Google Audio Player functions to (i) receive from the "master" Google Audio Player, via its network interface, audio information and associated playback timing information and (ii) engage in synchronous playback of the received audio information with at least the "master" Google Audio Player based on the received playback timing information associated with the received audio information while a local clock time of the "slave" Google Audio Player differs from a local clock time of the "master" Google Audio Player. *See, e.g.*, Ex. 127, GOOG-SONOSWDTX-00048969 ("On each follower, the time sync will track the offset between the leader's monotonic clock and the follower's monotonic clock; the follower can therefore adjust the timestamp for each incoming [audio] frame appropriately. Audio frames will then be output as usual….").

332. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the '001 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the '001 Patent. In particular, (a) Google had actual knowledge of the '001 Patent or was willfully blind to its existence prior to (at least as early as August 2021), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the '001 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses of the system, including infringing uses (*see* Exs. 20, 29, 60, 61), (c) Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the '001 Patent, and (d) users of the Google Wireless Audio System

directly infringe one or more claims of the '001 Patent. For instance, at a minimum, Google has supplied and continues to supply Google Audio Players to customers while knowing that use of these products will infringe one or more claims of the '001 Patent and that Google's customers then directly infringe one or more claims of the '001 Patent by using these Google Audio Players in accordance with Google's product literature. *See, e.g.*, *id.*

333. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the '001 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the Google Wireless Audio System that contribute to the direct infringement of the '001 Patent by users of the Google Wireless Audio System. In particular, (a) Google had actual knowledge of the '001 Patent or was willfully blind to its existence prior to (at least as early as August 2021), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers for sale, sells, and/or imports, in connection with the Google Wireless Audio System, one or more material components of the invention of the '001 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Google knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the '001 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the '001 Patent. For instance, at a minimum, Google offers for sale, sells, and/or imports software updates for Google Audio Players that meet one or more claims of the '001 Patent. *See, e.g.*, Ex. 20, 29, 60, 61, 85. These software updates are material components of the Google Audio Players that meet the one or more claims of the '001 Patent. Further, Google especially made and/or adapted these software updates for use in the Google Audio Players that meet the one or more claims of the '001 Patent, and these software updates are not staple articles

of commerce suitable for substantial noninfringing use. Google's customers then directly infringe the one or more claims of the '001 Patent by installing and using software updates on the Google Audio Players.

334. Google's infringement of the '001 Patent is also willful because Google (a) had actual knowledge of the '001 Patent or was willfully blind to its existence prior to (at least as early as August 2021), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) engaged in the aforementioned activity despite an objectively high likelihood that Google's actions constituted infringement of the '001 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Google.

335. Additional allegations regarding Google's pre-suit knowledge of the '001 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

336. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '001 Patent.

337. Sonos is entitled to recover from Google all damages that Sonos has sustained as a result of Google's infringement of the '001 Patent, including, without limitation, a reasonable royalty and lost profits.

338. Google's infringement of the '001 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

339. Google's infringement of the '001 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

340. Google's infringement of the '001 Patent has caused irreparable harm (including the loss of market share) to Sonos and will continue to do so unless enjoined by this Court.

COUNT IX: INFRINGEMENT OF U.S. PATENT NO. 10,966,025

341. Sonos incorporates by reference and re-alleges paragraphs 85-93 and 221-232 of this Second Amended Complaint as if fully set forth herein.

342. Google and/or users of the Google Wireless Audio System have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '025 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Google Wireless Audio System within the United States and/or importing the Google Wireless Audio System into the United States without authority or license.

343. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 1 of the '025 Patent in connection with the Google Wireless Audio System. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the Google Wireless Audio System that it obtains during discovery.

Claim 1	Google
1. A playback device comprising:	At least each Google Home, Home Mini, Home Max, Nest Mini, and Nest Audio comprises a "playback device," as recited in claim 1. At least each smartphone, tablet, and computer installed with the Google Home app (where a computing device installed with at least the Google Home app is referred to herein as a "Chromecast-enabled computing device") comprises a "controller," as recited in claim 1.
a network interface configured to receive audio data over a network;	Each of the foregoing Google Audio Players includes a network interface configured to receive audio data over a network, such as a Wi-Fi interface. *See, e.g.*, Ex. 112.
one or more speaker drivers configured to output audio	Each of the foregoing Google Audio Players includes one or more speaker drivers configured to output audio based on the audio data. *See, e.g.*, Ex. 112.

Claim 1	Google
based on the audio data;	
one or more processors; and	Each of the foregoing Google Audio Players includes one or more processors. *See, e.g.*, Ex. 112.
tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the instructions, when executed by the one or more processors, cause the playback device to:	Each of the foregoing Google Audio Players includes tangible, non-transitory, computer-readable memory comprising executable program instructions that enable the Google Audio Player to perform the functions identified below. *See, e.g.*, Ex. 112.
receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles; and	Each of the foregoing Google Audio Player comprises program instructions that, when executed by the Google Audio Player's one or more processors, cause the Google Audio Player to receive a signal from a Chromecast-enabled computing device over the network, where the signal comprises an instruction for the Google Audio Player to become paired with one or more other Google Audio Players such that, after pairing, the Google Audio Player and the one or more other Google Audio Players have different playback roles. For instance, each of the foregoing Google Audio Players is programmed with the capability to receive, from a Chromecast-enabled computing device over a Wi-Fi network that the Google Audio Player is connected to, an instruction to begin operating as part of a "speaker pair" configuration for "stereo sound" (also referred to by Google as a "stereo pairing") with another Google Audio Player of the same model as the Google Audio Player, which is a configuration involving two or more Google Audio Players having different playback roles. *See, e.g.*, Ex. 69 ("Pair Google Home Max speakers[:] You can pair two Google Home Max speakers (devices) for stereo sound and an immersive experience for music and

Claim 1	Google
	casting…. Step 1. Place speakers in the best position in your room …. Step 2. Set up both Google Home Max speakers …. Step 3. Pair the speakers …. Step 4. Control the speaker pair"); Ex. 132 ("For an immersive music and media experience, you can connect 2 speakers to set up stereo sound. Stereo sound pairing is available on Google Home, Google Nest Mini (2nd gen), Google Home Mini (1st gen), Google Home Max, and Google Nest Audio."). In a "speaker pair" configuration, one Google Audio Player has the role of playing back the left audio channel, and the other Google Audio Player has the role of playing back the right audio channel. *See, e.g.*, Ex. 69 ("Tap **Left** or **Right** to match the location of the blinking speaker ….") (emphasis in original). For example, at the time that a user inputs a request to create a given "speaker pair" via a Chromecast-enabled computing device, the Chromecast-enabled computing device transmits control packets to at least a first Google Audio Player in the given "speaker pair." On information and belief, these control packets include an instruction for the first Google Audio Player to begin operating as part of the given "speaker pair" with at least a second Google Audio Player of the same model as the first Google Audio Player. *See, e.g.*, Ex. 69 ("When two speakers are paired, your Assistant lives and responds on the **left speaker**. To use your Assistant on the right speaker, unpair the speakers using the steps below. Then you can use your Assistant on both speakers.") (emphasis in original); Ex. 132.
(i) determine that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback device is paired with the one or more	Each of the foregoing Google Audio Player comprises program instructions that, when executed by the Google Audio Player's one or more processors, cause the Google Audio Player to (i) determine that either (a) the Google Audio Player is not paired with the one or more other Google Audio Players or (b) that the Google Audio Player is paired with the one or more other Google Audio Players such that the Google Audio Player and the one or more other Google Audio Players have the different playback

Claim 1	Google
other playback devices such that the playback device and the one or more other playback devices have the different playback roles, (ii) configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices, and (iii) change the configuration of the playback device by configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices.	roles, (ii) configure the Google Audio Player to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the Google Audio Player has determined it is not paired with the one or more other Google Audio Players, and (iii) change the configuration of the Google Audio Player by configuring the Google Audio Player to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the Google Audio Player has determined it is paired with the one or more other Google Audio Players. For instance, each of the foregoing Google Audio Players is programmed with the capability to operate as part of a "speaker pair" configuration or not as part of such a configuration. *See, e.g.*, Ex. 69 ("Pair the speakers …. Unpair speakers"); Ex. 132. Moreover, each of the foregoing Google Audio Players is programmed with the capability to determine whether it is "paired" or not at various times, including but not limited to when the Google Audio Player receives an instruction to begin or stop operating as part of a "speaker pair" with another Google Audio Player, when the Google Audio Player is performing certain functions in accordance with its current "pairing type," and/or when the Google Audio Player powers up. *See, e.g.*, *id.* Further, each of the foregoing Google Audio Players is programmed with the capability to change how it processes audio data received over Wi-Fi (including but not limited to its channel output) when it is "paired" versus when it is not "paired". *See, e.g.*, Ex. 69 ("Pair the speakers …. Unpair speakers"); Ex. 132. As one example to illustrate, as discussed above, each of the foregoing Google Audio Players is programmed with the capability to operate as part of a "speaker pair" configuration or not as part of such a configuration.

Claim 1	Google
	When not in a "speaker pair" configuration, the Google Audio Player is configured to perform a first processing of audio data so as to output two-channel audio (e.g., both the left and right channels of audio) from its one or more speaker drivers. *See, e.g.*, Ex. 69, Ex. 132. On the other hand, when in a "speaker pair" configuration, the Google Audio Player is configured to perform a second processing of audio data so as to output one-channel audio (e.g., only the left or right channel of audio) from its one or more speaker drivers. *See, e.g., id.*

344. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the '025 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the '025 Patent. In particular, (a) Google had actual knowledge of the '025 Patent or was willfully blind to its existence prior to (at least as early as August 13, 2021), and no later than, the filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the '025 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses of the system, including infringing uses (*see* Exs. 67-70, Ex. 132), (c) Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the '025 Patent, and (d) users of the Google Wireless Audio System directly infringe one or more claims of the '025 Patent. For instance, at a minimum, Google has supplied and continues to supply the Google Audio Players to customers while knowing that use of this product will infringe one or more claims of the '025 Patent and that Google's customers then directly infringe one

or more claims of the '025 Patent by using theses Google Audio Players in accordance with Google's product literature. *See, e.g.*, *id*.

345. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the '025 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the Google Wireless Audio System that contribute to the direct infringement of the '025 Patent by users of the Google Wireless Audio System. In particular, (a) Google had actual knowledge of the '025 Patent or was willfully blind to its existence prior to (at least as early as August 13, 2021), and no later than, the filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers for sale, sells, and/or imports, in connection with the Google Wireless Audio System, one or more material components of the invention of the '025 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Google knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the '025 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the '025 Patent. For instance, at a minimum, Google offers for sale, sells, and/or imports software updates for Google Audio Players that meet one or more claims of the '025 Patent. *See, e.g.*, Exs. 67-70, 85, Ex. 132. These software updates are material components of the Google Audio Players that meet the one or more claims of the '025 Patent. Further, Google especially made and/or adapted these software updates for use in the Google Audio Players that meet the one or more claims of the '025 Patent, and these software updates are not staple articles of commerce suitable for substantial noninfringing use. Google's customers then directly infringe the one or more claims of the '025 Patent by installing and using software updates on the Google Audio Players.

346. Google's infringement of the '025 Patent is also willful because Google (a) had actual knowledge of the '025 Patent or was willfully blind to its existence prior to (at least as early as August 13, 2021), and no later than, the filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) engaged in the aforementioned activity despite an objectively high likelihood that Google's actions constituted infringement of the '025 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Google.

347. Additional allegations regarding Google's pre-suit knowledge of the '025 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

348. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '025 Patent.

349. Sonos is entitled to recover from Google all damages that Sonos has sustained as a result of Google's infringement of the '025 Patent, including, without limitation, a reasonable royalty and lost profits.

350. Google's infringement of the '025 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

351. Google's infringement of the '025 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

352. Google's infringement of the '025 Patent has caused irreparable harm (including the loss of market share) to Sonos and will continue to do so unless enjoined by this Court.

COUNT X: INFRINGEMENT OF U.S. PATENT NO. 10,541,883

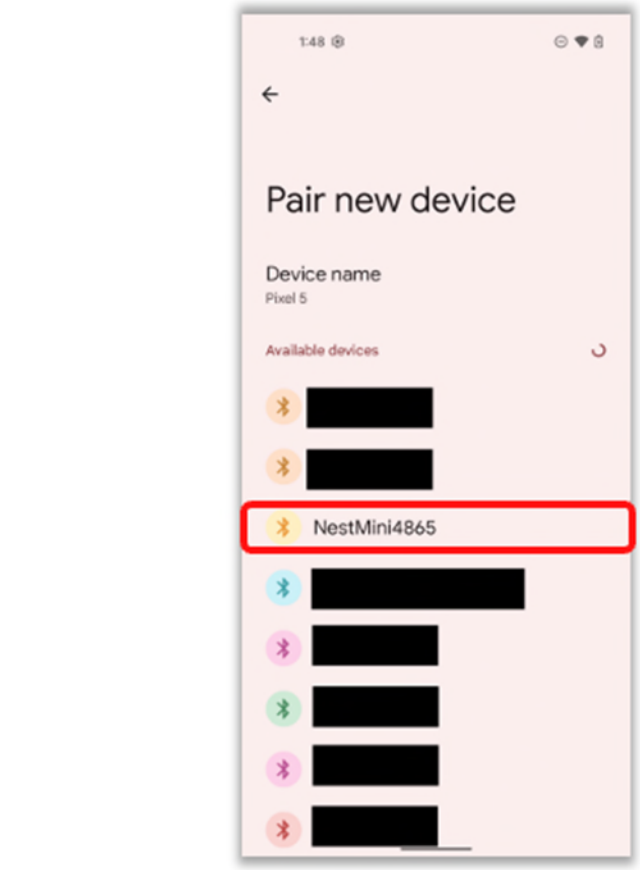
353. Sonos incorporates by reference and re-alleges paragraphs 85-93 and 233-244 of this Second Amended Complaint as if fully set forth herein.

354. Google and/or users of the Google Wireless Audio System have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '883 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Google Wireless Audio System within the United States and/or importing the Google Wireless Audio System into the United States without authority or license.

355. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 1 of the '883 Patent in connection with the Google Wireless Audio System. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the Google Wireless Audio System that it obtains during discovery.

Claim 1	Google
1. A playback device comprising:	At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a "playback device," as recited in claim 1. At least each smartphone, tablet, and computer installed with the Google Home app (where a computing device installed with Google Home app is referred to herein as a "Chromecast-enabled computing device") comprises a "computing device," as recited in claim 1.
a network interface that is configured to provide an interconnection with at least one data network;	Each of the foregoing Google Audio Players includes a network interface that is configured to provide an interconnection with at least one data network, such as a Wi-Fi interface. *See, e.g.*, Exs. 68, 95-98, 111-113.
at least one processor;	Each of the foregoing Google Audio Players includes at least one processor. *See, e.g.*, Exs. 68, 95-98, 111-113.

Claim 1	Google
a non-transitory computer-readable medium; and program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising:	Each of the foregoing Google Audio Players includes a non-transitory computer-readable medium and program instructions stored on the non-transitory computer-readable medium that, when executed by the Google Audio Player's at least one processor, cause the Google Audio Player to perform the functions identified below. *See*, *e.g.*, Exs. 68, 85, 95-98, 111-113.
detecting a triggering event that causes the playback device to enter a setup mode in which the playback device transmits at least a first message indicating that the playback device is available for setup;	Each of the foregoing Google Audio Players comprises program instructions that, when executed by the Google Audio Player's at least one processor, cause the Google Audio Player to detect a triggering event that causes the Google Audio Player to enter a setup mode in which Google Audio Player transmits at least a first message indicating that the Google Audio Player is available for setup. For instance, each of the foregoing Google Audio Players is programmed with the capability to detect a triggering event, such as the Google Audio Player being powered on for the first time out of the box or being factory reset, that causes the Google Audio Player to enter a setup mode in which the Google Audio Player transmits a message indicating that the Google Audio Player is available for setup (e.g., a Bluetooth advertisement message). This functionality is evidenced by the exemplary screenshots below.

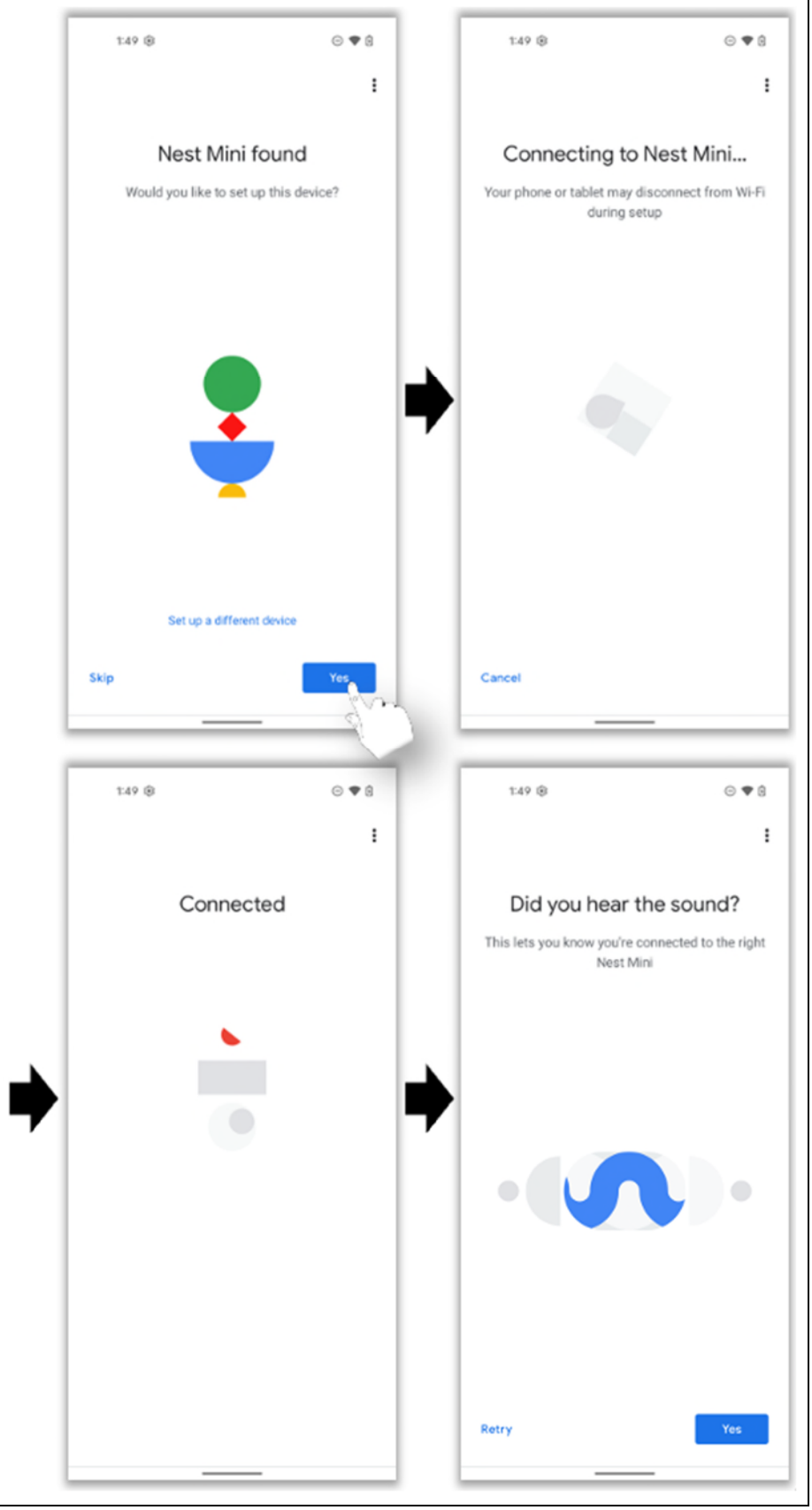

1:48
Pair new device
Device name
Pixel 5
Available devices
NestMini4865


1:47
House
Add your favorite devices and actions for quick access
Set up new Nest Mini?
If this is your device, you can set it up now, or do it later.
Not now
Set up

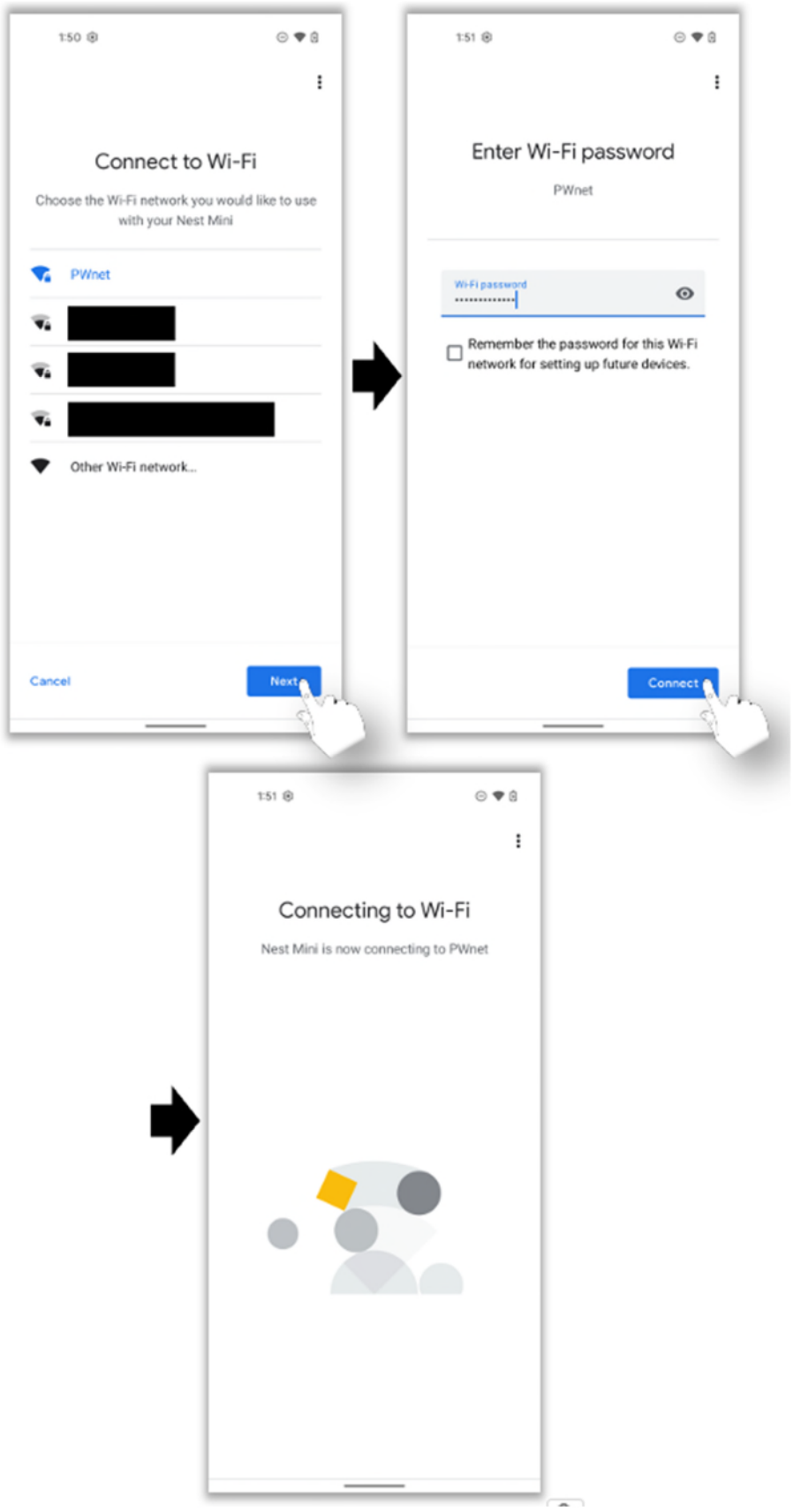

1:49
Nest Mini found
Would you like to set up this device?
Set up a different device
Skip
Yes

Claim 1	Google
	See also, e.g., Ex. 101 ("1. Plug in Google Home. . . . 7. Scanning for Google Home devices: The Google Home app scans for nearby devices that are plugged in and ready to set up. Tap the home you want to add the device to > Next."); Ex. 135 ("What you need to get started[:] . . . An Android phone or tablet that . . . [h]as Bluetooth turned on. . . . 1. Plug in your Nest speaker or display. •If the device has been used before, factory reset your speaker or display before you continue."); Ex. 136.
while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device, wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point, wherein the initial communication path with the computing device does not traverse the access point;	Each of the foregoing Google Audio Players comprises program instructions that, when executed by the Google Audio Player's at least one processor, cause the Google Audio Player to, while in the setup mode, receive a response to the first message that facilitates establishing an initial communication path with a Chromecast-enabled computing device that is installed with an application for controlling the playback device, where the Chromecast-enabled computing device is operating on a secure WLAN that is defined by an access point and where the initial communication path with the computing device does not traverse the access point. For instance, each of the foregoing Google Audio Players is programmed with the capability to be set up and controlled on a secure local Wi-Fi network (which is a WLAN) that is defined by an access point (e.g., a router) with the assistance of a Chromecast-enabled computing device that is running the Google Home app and that is communicatively coupled to the secure local Wi-Fi network. *See, e.g.*, Ex. 101 ("The Google Home app will walk you through the steps to set up Google Home. . . . Choose the Wi-Fi network you want to connect to your device. . . . Access your music and movie services."); Ex. 135 ("The Google Home app will walk you through the steps to set up your Google Nest or Home speaker or display. . . . **Important:** Make sure your setup device is connected to the Wi-Fi network you want to connect your Nest speaker or display to."); Exs. 80, 102, 10, 136.

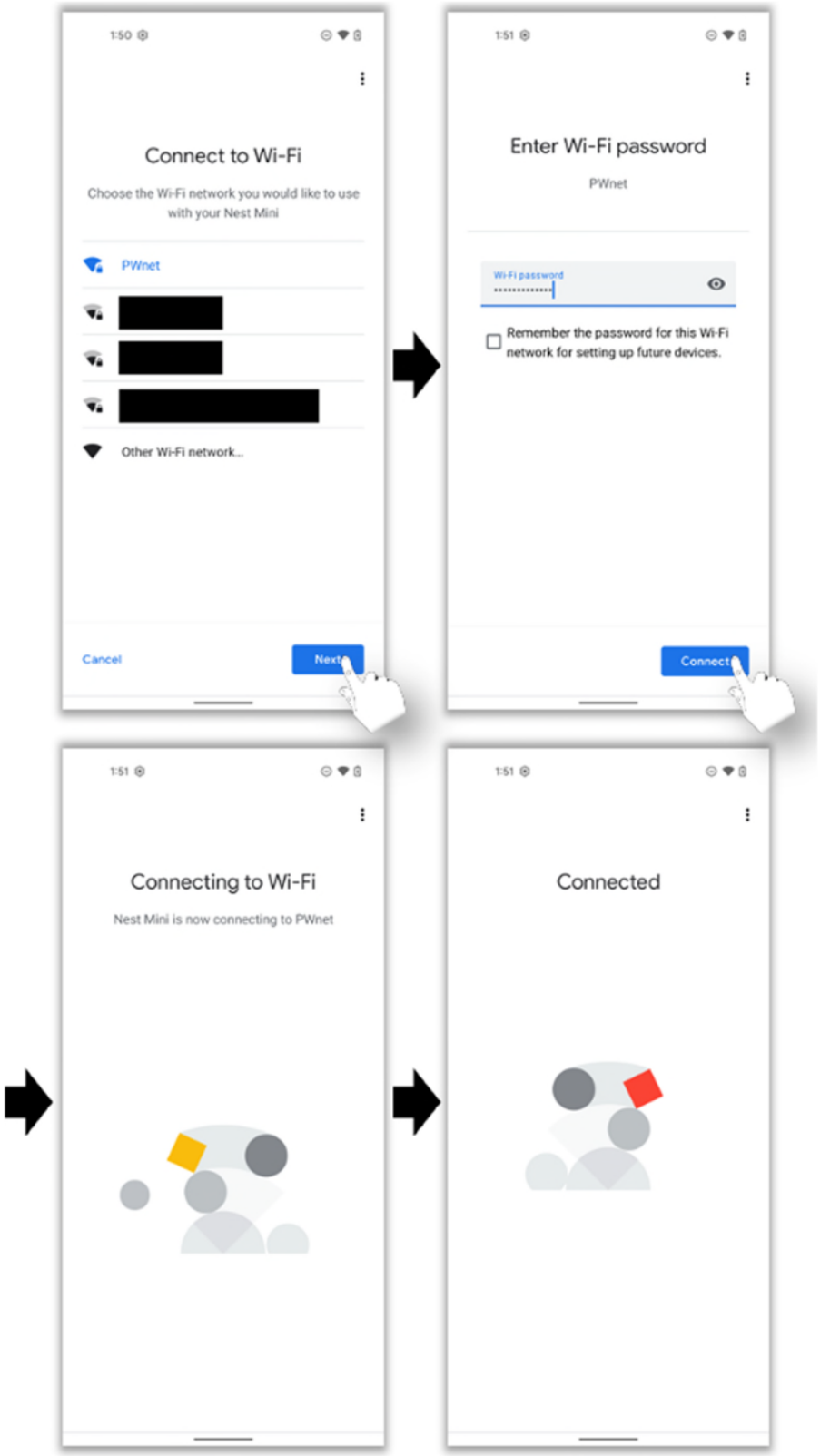
Claim 1	Google
	In this regard, each of the foregoing Google Audio Players is programmed with the capability to, while in a setup mode, receive a response to a message transmitted by the Google Audio Player indicating that the Google Audio Player is available for setup, where the response facilitates establishing an initial communication path with a Chromecast-enabled computing device that is running the Google Home app and that is communicatively coupled to a secure local Wi-Fi network that is defined by an access point, and where the initial communication path is established directly between the Google Audio Player and the Chromecast-enabled computing device (*e.g.*, via Bluetooth), as opposed to traversing the access point for the secure local Wi-Fi network. *See*, *e.g.*, Ex. 101 ("8. Connecting to your new device: The app will now connect your phone to your new Google Home so that you can configure it. Note: You will be prompted with the following notification during this step, 'Your phone may disconnect from Wi-Fi during setup'. 9. Making a connection: We'll play a sound on the device to make sure you're setting up the right device. When you hear the sound, tap Yes."); Ex. 135 ("What you need to get started[:] . . . An Android phone or tablet that . . . [h]as Bluetooth turned on."); Ex. 136. This functionality is evidenced by the exemplary screenshots below.

Claim 1	Google
	

Claim 1	Google
receiving, from the computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN;	Each of the foregoing Google Audio Players comprises program instructions that, when executed by the Google Audio Player's at least one processor, cause the Google Audio Player to receive, from the Chromecast-enabled computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, where the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN. For instance, each of the foregoing Google Audio Players is programmed with the capability to, after establishing an initial communication path with a Chromecast-enabled computing device, receive, from the Chromecast-enabled computing device via the initial communication path, one or more messages containing network configuration parameters for the secure local Wi-Fi network that include an identifier of the secure local Wi-Fi network and a security key for the secure local Wi-Fi network. This functionality is evidenced by the exemplary screenshots below.


1:50
Connect to Wi-Fi
Choose the Wi-Fi network you would like to use with your Nest Mini
PWnet
[redacted]
[redacted]
[redacted]
Other Wi-Fi network...
Cancel
Next
1:51
Enter Wi-Fi password
PWnet
Wi-Fi password
Remember the password for this Wi-Fi network for setting up future devices.
Connect
1:51
Connecting to Wi-Fi
Nest Mini is now connecting to PWnet

Claim 1	Google
	See also, e.g., Ex. 101 ("13. Wi-Fi connection: Choose the Wi-Fi network you want to connect to your device. . . . Tap OK to use the password you have saved in your phone [or] [t]o manually enter the password, tap Enter manually > type in password > Connect.").
using the network configuration parameters to connect to the secure WLAN that is defined by the access point; and	Each of the foregoing Google Audio Players comprises program instructions that, when executed by the Google Audio Player's at least one processor, cause the Google Audio Player to use the network configuration parameters to connect to the secure WLAN that is defined by the access point. For instance, each of the foregoing Google Audio Players is programmed with the capability to, after receiving network configuration parameters for a secure local Wi-Fi network that is defined by an access point, use the network configuration parameters to connect to the secure local Wi-Fi network. This functionality is evidenced by the exemplary screenshots below.

Claim 1	Google
	 *See also, e.g.*, Ex. 101 ("13. Wi-Fi connection: Choose the Wi-Fi network you want to connect to your device. . . . Tap

Claim 1	Google
	OK to use the password you have saved in your phone [or] [t]o manually enter the password, tap Enter manually > type in password > Connect.”).
transitioning from communicating with the computing device via the initial communication path to communicating with the computing device via the secure WLAN that is defined by the access point.	Each of the foregoing Google Audio Players comprises program instructions that, when executed by the Google Audio Player’s at least one processor, cause the Google Audio Player to transition from communicating with the Chromecast-enabled computing device via the initial communication path to communicating with the Chromecast-enabled computing device via the secure WLAN that is defined by the access point. For instance, each of the foregoing Google Audio Players is programmed with the capability to, after using network configuration parameters received from a Chromecast-enabled computing device via an initial communication path to connect to a secure local Wi-Fi network that is defined by an access point, transition from communicating with the Chromecast-enabled computing device via the initial communication path to communicating with the Chromecast-enabled computing device via the secure local Wi-Fi network. *See, e.g.*, Ex. 101 (“13. Wi-Fi connection: Choose the Wi-Fi network you want to connect to your device. . . . Tap OK to use the password you have saved in your phone [or] [t]o manually enter the password, tap Enter manually > type in password > Connect.”). As illustrative examples, after the Google Audio Player transitions from communicating with the Chromecast-enabled computing device via the initial communication path to communicating with the Chromecast-enabled computing device via the secure local Wi-Fi network, the Google Audio Player is capable of receiving commands from the Chromecast-enabled computing device via the secure local Wi-Fi network, such as a command for the Google Audio Player to adjust its audio volume or a command for the Google Audio Player to retrieve audio content for playback from an Internet-based audio service (*e.g.*, YouTube Music, Spotify, Pandora, Google Play Music, Deezer, TuneIn, iHeartRadio, etc.) that in turn

Claim 1	Google
	causes the Google Audio Player to retrieve the audio content from the Internet-based audio service via a communication path including the secure local Wi-Fi network and the Internet. *See, e.g.*, Ex. 30 ("Other ways to control music . . . From the Google Home app[:] 1. Make sure your mobile device or tablet is connected to the same Wi-Fi as your speaker or display. 2. Open the Google Home app . 3.Tap **Play music** under the name of the device that you want to use. Your device will play music from your default music provider. You can pause, resume, change volume and skip forward or backward in the song.") (emphasis in original); Ex. 101 ("Media services: Access your music and movie services. . . . Default music service: If you have more than one music service linked, you will be asked to select a Default music service: Tap the service you want to use as default > Next."); Ex. 124 ("Other ways to control music . . . You can also start and control music from the Google Home app. . . . From the Google Home app[:] 1. Make sure your mobile device or tablet is linked to the same account as your speaker or display. 2. Open the Google Home app . 3.Tap **Favorites** ♡. Tap the current media session for: •Playback controls •Volume control (media and Google Assistant) •Playback device selection"); Exs. 104, 105.

356. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the '883 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the '883 Patent. In particular, (a) Google had actual knowledge of the '883 Patent or was willfully blind to its existence prior to (at least as early as August 13, 2021), and no later than, the filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the '883 Patent by

promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses of the system, including infringing uses (*see* Exs. 34, 35, 79, 80, 101, 135, 136), (c) Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the '883 Patent, and (d) users of the Google Wireless Audio System directly infringe one or more claims of the '883 Patent. For instance, at a minimum, Google has supplied and continues to supply Google Audio Players to customers while knowing that use of these products will infringe one or more claims of the '883 Patent and that Google's customers then directly infringe one or more claims of the '883 Patent by using these Google Audio Players in accordance with Google's product literature. *See, e.g., id.*

357. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the '883 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the Google Wireless Audio System that contribute to the direct infringement of the '883 Patent by users of the Google Wireless Audio System. In particular, (a) Google had actual knowledge of the '883 Patent or was willfully blind to its existence prior to (at least as early as August 13, 2021), and no later than, the filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers for sale, sells, and/or imports, in connection with the Google Wireless Audio System, one or more material components of the invention of the '883 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Google knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the '883 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the '883 Patent. For instance, at a minimum, Google offers for sale, sells, and/or imports software updates for Google Audio Players that meet one or

more claims of the '883 Patent. *See, e.g.*, Ex. 34, 35, 79, 80, 101, 135, 136, 85. These software updates are material components of the Google Audio Players that meet the one or more claims of the '883 Patent. Further, Google especially made and/or adapted these software updates for use in the Google Audio Players that meet the one or more claims of the '883 Patent, and these software updates are not staple articles of commerce suitable for substantial noninfringing use. Google's customers then directly infringe the one or more claims of the '883 Patent by installing and using software updates on the Google Audio Players.

358. Google's infringement of the '883 Patent is also willful because Google (a) had actual knowledge of the '883 Patent or was willfully blind to its existence prior to (at least as early as August 13, 2021), and no later than, the filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) engaged in the aforementioned activity despite an objectively high likelihood that Google's actions constituted infringement of the '883 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Google.

359. Additional allegations regarding Google's pre-suit knowledge of the '883 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

360. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '883 Patent.

361. Sonos is entitled to recover from Google all damages that Sonos has sustained as a result of Google's infringement of the '883 Patent, including, without limitation, a reasonable royalty and lost profits.

362. Google's infringement of the '883 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

363. Google's infringement of the '883 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

364. Google's infringement of the '883 Patent has caused irreparable harm (including the loss of market share) to Sonos and will continue to do so unless enjoined by this Court.

PRAYER FOR RELIEF

365. WHEREFORE, Sonos respectfully requests:

366. That Judgment be entered that Google has infringed at least one or more claims of the patents-in-suit, directly and/or indirectly, literally and/or under the doctrine of equivalents, and that such infringement is willful;

367. An injunction enjoining Google, its officers, agents, servants, employees and attorneys, and other persons in active concert or participation with Google, and its parents, subsidiaries, divisions, successors and assigns, from further infringement of the '014 Patent, the '959 Patent, the '715 Patent, the '896 Patent, the '001 Patent, the '025 Patent, and the '883 Patent.

368. An award of damages sufficient to compensate Sonos for Google's infringement under 35 U.S.C. § 284, including an enhancement of damages on account of Google's willful infringement;

369. That the case be found exceptional under 35 U.S.C. § 285 and that Sonos be awarded its reasonable attorneys' fees;

370. Costs and expenses in this action;

371. An award of prejudgment and post-judgment interest; and

372. Such other and further relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Sonos respectfully demands a trial by jury on all issues triable by jury.

Dated: November 26, 2024

Respectfully submitted,

ORRICK HERRINGTON & SUTCLIFFE LLP
and
LEE SULLIVAN SHEA & SMITH LLP

By: */s/ Alyssa Caridis*
ALYSSA CARIDIS
Attorneys for Plaintiff Sonos, Inc.