

1 Clement S. Roberts (SBN 209203)
2 *croberts@orrick.com*
3 ORRICK HERRINGTON & SUTCLIFFE LLP
4 405 Howard Street
5 San Francisco, CA 94105
6 Tel: (415) 773-5700 -- Fax: (415) 773-5759

7 Alyssa Caridis (SBN 260103)
8 *acaridis@orrick.com*
9 ORRICK HERRINGTON & SUTCLIFFE LLP
10 777 South Figueroa Street, Suite 3200
11 Los Angeles, CA 90017
12 Tel: (213) 629-2020 -- Fax: (213) 612-2499

13 George I. Lee (*pro hac vice* forthcoming)
14 *lee@ls3ip.com*
15 Sean M. Sullivan (*pro hac vice* forthcoming)
16 *sullivan@ls3ip.com*
17 Rory P. Shea (*pro hac vice* forthcoming)
18 *shea@ls3ip.com*
19 J. Dan Smith (*pro hac vice* forthcoming)
20 *smith@ls3ip.com*
21 LEE SULLIVAN SHEA & SMITH LLP
22 656 W Randolph St, Floor 5W
23 Chicago, IL 60661
24 Tel: (312) 754-0002 -- Fax: (312) 754-0003

25 *Attorneys for Plaintiff Sonos, Inc.*

26
27 **UNITED STATES DISTRICT COURT**
28 **FOR THE CENTRAL DISTRICT OF CALIFORNIA**

SONOS, INC.,

Plaintiff,

v.

GOOGLE LLC,

Defendant.

Case No. 2:20-cv-00169-JAK
(DFMx)

**FIRST AMENDED
COMPLAINT FOR PATENT
INFRINGEMENT**

JURY TRIAL DEMANDED

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

TABLE OF CONTENTS

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT.....	4
INTRODUCTION	4
SONOS’S INNOVATION	7
GOOGLE’S INFRINGEMENT	10
FOR YEARS, SONOS ATTEMPTED TO REMEDY GOOGLE’S INFRINGEMENT WITHOUT TURNING TO THE COURTS	16
GOOGLE’S CONTINUED INFRINGEMENT FORCED THIS SUIT AND THE ITC INVESTIGATION.....	19
GOOGLE’S INFRINGEMENT HAS BEEN WILLFUL	21
GOOGLE’S UNJUST ENRICHMENT	25
THE PARTIES	26
JURISDICTION AND VENUE.....	27
PATENTS-IN-SUIT	28
Background.....	28
U.S. Patent No. 7,571,014.....	31
The Inventions Claimed in U.S. Patent No. 7,571,014 Improved Technology & Were Not Well-Understood, Routine, or Conventional.....	32
The Inventions Claimed in U.S. Patent No. 7,571,014 Provide Important Advantages to Multi-Room Audio Systems.....	34
U.S. Patent No. 8,588,949	36
The Inventions Claimed in U.S. Patent No. 8,588,949 Improved Technology & Were Not Well-Understood, Routine, or Conventional.....	37
The Inventions Claimed in U.S. Patent No. 8,588,949 Provide Important Advantages to Wireless Audio Systems.....	39

1	U.S. Patent No. 9,195,258	41
2	The Inventions Claimed in U.S. Patent No. 9,195,258	
3	Improved Technology & Were Not Well-Understood,	
4	Routine, or Conventional.....	42
5	The Inventions Claimed in U.S. Patent No. 9,195,258 Provide	
6	Important Advantages to Wireless Audio Systems.....	44
7	U.S. Patent No. 9,219,959	46
8	The Inventions Claimed in U.S. Patent No. 9,219,959	
9	Improved Technology & Were Not Well-Understood,	
10	Routine, or Conventional.....	47
11	The Inventions Claimed in U.S. Patent No. 9,219,959 Provide	
12	Important Advantages to Wireless Audio Systems.....	49
13	U.S. Patent No. 10,031,715	52
14	The Inventions Claimed in U.S. Patent No. 10,031,715	
15	Improved Technology & Were Not Well-Understood,	
16	Routine, or Conventional.....	52
17	The Inventions Claimed in U.S. Patent No. 10,031,715 Provide	
18	Important Advantages to Wireless Audio Systems.....	54
19	U.S. Patent No. 10,209,953	54
20	The Inventions Claimed in U.S. Patent No. 10,209,953	
21	Improved Technology & Were Not Well-Understood,	
22	Routine, or Conventional.....	55
23	The Inventions Claimed in U.S. Patent No. 10,209,953 Provide	
24	Important Advantages to Wireless Audio Systems.....	57
25	U.S. Patent No. 10,439,896	57
26	The Inventions Claimed in U.S. Patent No. 10,439,896	
27	Improved Technology & Were Not Well-Understood,	
28	Routine, or Conventional.....	58
	The Inventions Claimed in U.S. Patent No. 10,439,896 Provide	
	Important Advantages to Wireless Audio Systems.....	61

1	U.S. Patent No. 11,080,001	62
2	The Inventions Claimed in U.S. Patent No. 11,080,001	
3	Improved Technology & Were Not Well-Understood,	
4	Routine, or Conventional.....	62
5	The Inventions Claimed in U.S. Patent No. 11,080,001 Provide	
6	Important Advantages to Wireless Audio Systems.....	65
7	COUNT I: INFRINGEMENT OF U.S. PATENT NO. 7,571,014	65
8	COUNT II: INFRINGEMENT OF U.S. PATENT NO. 8,588,949	91
9	COUNT III: INFRINGEMENT OF U.S. PATENT NO. 9,195,258.....	117
10	COUNT IV: INFRINGEMENT OF U.S. PATENT NO. 9,219,959	124
11	COUNT V: INFRINGEMENT OF U.S. PATENT NO. 10,031,715.....	131
12	COUNT VI: INFRINGEMENT OF U.S. PATENT NO. 10,209,953	139
13	COUNT VII: INFRINGEMENT OF U.S. PATENT NO. 10,439,896	147
14	COUNT VIII: INFRINGEMENT OF U.S. PATENT NO. 11,080,001.....	162
15	PRAYER FOR RELIEF	173
16	DEMAND FOR JURY TRIAL	173
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		

1 **FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

2 1. Plaintiff Sonos, Inc. (“Sonos” or “Plaintiff”) hereby asserts the
3 following claims for patent infringement of United States Patent Nos. 7,571,014,
4 8,588,949, 9,195,258, 9,219,959, 10,031,715, 10,209,953, 10,439,896, and
5 11,080,001 (“patents-in-suit”; attached hereto as Exhibits 1-5 and 108-110)
6 against Defendant Google LLC (“Google” or “Defendant”), and alleges as
7 follows:

8 **INTRODUCTION**

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

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

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

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

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

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

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

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

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

26 ¹ Notwithstanding the ITC's findings to contrary, Sonos respectfully submits that
27 Google's insubstantial "design-arounds" continue to infringe all five of the Sonos
28 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.

1 flood the market. These actions have caused and continue to cause significant
2 damage to Sonos as Sonos has been forced to compete in the marketplace against
3 its own patented technology being sold by Google at a loss as a part of a broader
4 strategy to enter every American home.

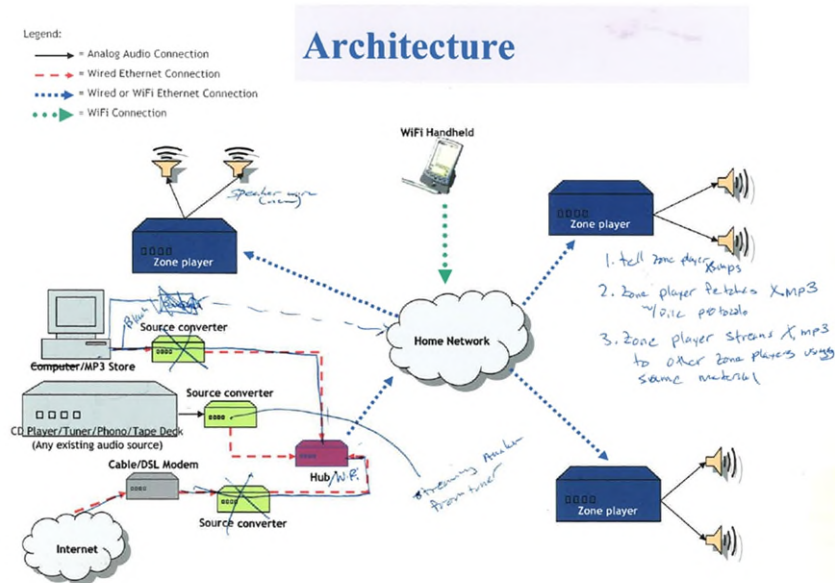
5 9. Sonos has brought this lawsuit to hold Google accountable for its
6 willful infringement of Sonos's patent rights.

7 **SONOS'S INNOVATION**

8 10. Founded in 2002, Sonos invented what is known today as wireless
9 multi-room audio. Ex. 6 (2013 *NBC News*: "If you're not familiar with Sonos,
10 this company revolutionized the home audio world a decade ago...."); Ex. 7
11 (2015 *Men's Journal*: "Sonos almost singlehandedly established the stand-alone
12 wireless home speaker system category....").

13 11. At the time of Sonos's founding, multi-room audio systems were
14 dependent on a centralized receiver hard-wired to each individual passive speaker
15 throughout a home or business. In sharp contrast, Sonos's system eliminated this
16 dependency and, instead, relies on intelligent, networked playback devices to
17 deliver premium sound wirelessly throughout a home or business. While
18 conquering the challenge of inventing a multi-room wireless audio system was
19 difficult in its own right, Sonos also built a system that is easy to setup, easy to
20 use, customizable, readily integrated with other technologies and services, and
21 effective in delivering outstanding sound quality in any home or business
22 environment. *See, e.g.*, Ex. 8 (2005 *PC Magazine*: describing one of Sonos's first
23 products as "the iPod of digital audio" for the home and contrasting Sonos with
24 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.



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

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

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

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

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

12 **GOOGLE’S INFRINGEMENT**

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

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

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

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

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

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

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

15 Ex. 21.

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

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

25 Ex. 22.

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

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

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

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

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

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

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

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

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

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

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

6 32. In contrast to the Google Home Max, which was priced similarly to
7 Sonos's comparable products, the Google Home Mini predatorily implemented
8 Sonos's valuable patented technology into an all-in-one wireless multi-room
9 product that Google sells at a subsidized price point or even gives away for free.
10 Ex. 27 ("At \$49, Google Home Mini works on its own or you can have a few
11 around the house, giving you the power of Google anywhere in your home."); Ex.
12 28 ("Google partnered with Spotify to offer Home Minis as a free promotion for
13 Spotify Premium customers. Spotify's premium userbase is nearly 90 million, so
14 if even a fraction of users take the free offer, a massive influx of Google smart
15 speakers will enter the market."). As is well understood, Google uses its Home
16 Mini as a "loss leader" to generate additional revenue from other revenue streams
17 that are bolstered and/or enabled by the sale of Google's wireless multi-room
18 audio products. *See, e.g.*, Ex. 28 (explaining that Google is using its smart
19 speaker devices as a "'loss leader' to support advertising or e-commerce.").

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

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

1 YouTube Music app, the Google Play Music app, and the Google Home app. *See,*
2 *e.g.*, Exs. 29-39, 111-113.²

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



10 36. In addition to providing the various software Google Apps for
11 controlling the Google Audio Players, Google also offers various infringing
12 hardware controller devices that are pre-installed with the Google Play Music app
13 and/or YouTube Music app (and capable of downloading and executing the
14 Google Apps that are not pre-installed). These infringing hardware controller
15 devices include, for example, Google's "Pixel" phones, tablets, and laptops (*e.g.*,
16 the Pixel 3, Pixel 3 XL, Pixel 3a, Pixel 3a XL, Pixel 4, Pixel 4 XL, Pixel 4a, Pixel
17 4a (5G), Pixel 5, Pixel 5a, Pixel 6, Pixel 6 Pro, Pixel 6a, Pixel 7, Pixel 7 Pro, Pixel
18 7a, Pixel Fold, Pixel 8, Pixel 8 Pro, Pixel 8a, Pixel 9, Pixel 9 Pro, Pixel 9 Pro XL,
19 and Pixel 9 Pro Fold phones, the Pixel Slate and Pixel Tablet tablets, and the
20 Pixelbook and Pixelbook Go laptops) (individually or collectively, "Google Pixel
21 Device(s)"). Google also makes the infringing Google Apps available to be
22 downloaded and installed on user devices not manufactured by Google itself
23 including iOS-compatible devices, such as iPhones and iPads, and devices
24 manufactured by Samsung, such as Samsung mobile phones, among others. *See,*
25 *e.g.*, Exs. 40-43.³

26 ² Any reference to a "Google Audio Player" or a "Google App" includes each
27 version and generation of such player/app unless otherwise noted.

28 ³ Any reference to a "Google Pixel Device" includes each version and generation
of such device unless otherwise noted.

1 37. Herein, “Google Wireless Audio System” refers to one or more
2 Google Audio Players, one or more Google Pixel Devices, and/or one or more
3 Google Apps.

4 **FOR YEARS, SONOS ATTEMPTED TO REMEDY GOOGLE’S**
5 **INFRINGEMENT WITHOUT TURNING TO THE COURTS**

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

- 10 • Chromecast
- 11 • Chromecast Ultra
- 12 • Chromecast Audio
- 13 • Chromecast with Google TV
- 14 • Google TV Streamer (4K)
- 15 • Pixel Tablet with Charging Speaker Dock
- 16 • Home Mini
- 17 • Nest Mini
- 18 • Home
- 19 • Home Max
- 20 • Home Hub
- 21 • Nest Hub
- 22 • Nest Hub Max
- 23 • Nest Audio
- 24 • Nest Wifi Point
- 25 • Google Home App
- 26 • Google Play Music App
- 27 • YouTube Music App
- 28 • 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.

1 45. On January 31, 2018, Sonos sent Matthew Gubiotti at Google a
2 PowerPoint presentation identifying 16 issued Sonos patents and 1 allowed Sonos
3 patent application, including the ‘959 Patent and the ‘949 Patent, and identifying
4 relevant Google products for each, including products accused in this case. Ex.
5 117.

6 46. On July 12, 2018, Sonos sent John LaBarre and Matthew Gubiotti at
7 Google a document identifying 58 issued Sonos patents, including yet again the
8 ‘258 Patent, the ‘949 Patent, the ‘014 Patent, and the ‘959 Patent and identifying
9 relevant Google products for each.

10 47. On February 22, 2019, Sonos sent Matthew Gubiotti, Bradley Riel,
11 and Tim Kowalski at Google a letter enclosing a link to an electronic repository
12 containing 100 claim charts detailing Google’s infringement of 92 issued Sonos
13 patents and 8 allowed Sonos patent applications, including the ‘258 Patent, the
14 ‘949 Patent, the ‘014 Patent, the ‘953 Patent, the ‘959 Patent, and the ‘715 Patent
15 asserted here.

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

22 49. On January 6, 2020, Sonos sent Bradley Riel and Tim Kowalski at
23 Google a pre-filing copy of an International Trade Commission Complaint, and a
24 pre-filing copy of the Original Complaint for this case, which included claim
25 charts detailing Google’s infringement of the ‘258 Patent, the ‘953 Patent, the
26 ‘959 Patent, the ‘949 Patent, and the ‘896 Patent.

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

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

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

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

14 **GOOGLE’S CONTINUED INFRINGEMENT FORCED THIS SUIT AND**
15 **THE ITC INVESTIGATION**

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

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

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

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

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

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

21 58. The ITC investigation concluded with a final determination that
22 Google’s original products infringed each of the ‘258 Patent, the ‘953 Patent, the
23 ‘949 Patent, the ‘959 Patent, and the ‘896 Patent, but that its “redesigned”
24 versions of the accused products did not infringe any of the ‘258 Patent, the ‘953
25 Patent, the ‘949 Patent, the ‘959 Patent, and the ‘896 Patent. Further, the ITC’s
26 final determination concluded that each of the ‘258 Patent, the ‘953 Patent, the
27 ‘949 Patent, the ‘959 Patent, and the ‘896 Patent were not invalid.
28

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, and the ‘001 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, and the ‘001 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, and the ‘014 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.

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

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

18 66. Worse, Google completely ignored the fact that the “redesigned”
19 versions of its products infringe other Sonos patents, including the additional
20 patents asserted by way of this First Amended Complaint, which Sonos put
21 Google on notice of prior to Google’s release of those “redesigned” versions. In
22 this way, Google plowed forward with its “redesigned” products knowing they
23 still infringe many of Sonos’s patents that Sonos already brought to Google’s
24 attention, including the ‘014 Patent, ‘715 Patent, and ‘001 Patent, which are now
25 asserted in this case.

26 67. Still further, as soon as the ‘949 Patent expired, Google added back
27 the features that were found to practice the asserted claims of the ‘949 Patent.
28 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

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

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

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

21 71. Further, Google has also been aware of (or, at a minimum, was
22 willfully blind to) Sonos's patents well before Sonos provided Google notice of
23 infringement because Google's development of competitive products since the
24 launch of its Google Wireless Audio System in 2015 occurred against the
25 backdrop of: 1) a decade in which Sonos was the recognized pioneer in the
26 wireless audio industry; 2) Google's partnership with Sonos dating to at least as
27 early as 2013; and 3) Sonos's prominent display of its patents on Sonos's website,
28

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

3 **GOOGLE'S UNJUST ENRICHMENT**

4 72. Google's infringement of Sonos's patented inventions has paved the
5 way for Google to generate billions of dollars in revenue. A December 2018
6 market report by *Royal Bank of Canada*, for example, concluded that Google has
7 sold over 40 million Google Home devices in the U.S. and that Google generated
8 \$3.4 billion in Google Home revenue in 2018 alone. Ex. 44 at p. 1, 4, 14-15.
9 *Royal Bank of Canada* also found that, as of August 2017, Google had sold more
10 than 55 million Chromecast devices and that Google generated \$998 million in
11 Chromecast revenue in 2018. *Id.* at p. 4, 16. Further, *Royal Bank of Canada*
12 estimated that, in 2018, Google generated \$3.4 billion in Pixel device revenue. *Id.*
13 at p. 4, 16, 18.

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

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

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

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

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

22 THE PARTIES

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

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

1 business, including established places of business in this district at, for example,
2 340 Main St, Venice, CA 90291 and 12422 W Bluff Creek, Playa Vista, CA
3 90094.

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

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

13 **JURISDICTION AND VENUE**

14 81. As this is a civil action for patent infringement arising under the
15 patent laws of the United States, 35 U.S.C. § 1 *et seq.*, this Court has subject
16 matter jurisdiction over the matters asserted herein under 28 U.S.C. §§ 1331 and
17 1338(a).

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

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

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

7 84. Venue is proper in this District under the provisions of 28 U.S.C. §
8 1400(b) because, as noted above, Google has committed acts of infringement in
9 this district and has one or more regular and established place of business in this
10 district.

11 PATENTS-IN-SUIT

12 Background

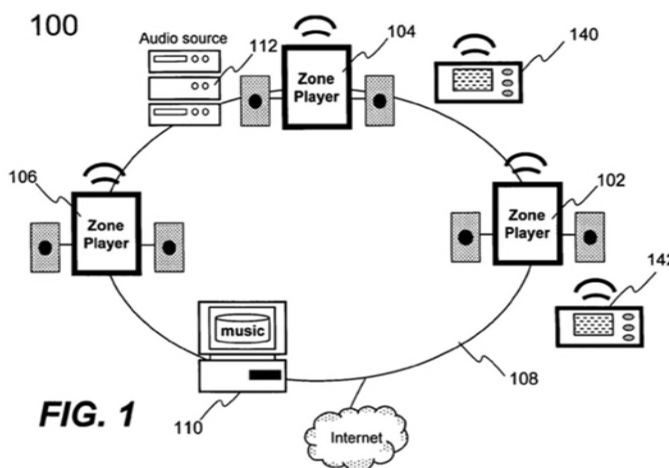
13 85. Sonos was founded to solve various shortcomings in existing
14 conventional audio technology. At the time, a “conventional multi-zone audio
15 system” was based on a “centralized” device that was “hard-wired” to “audio
16 players” in different rooms with dedicated speaker wire. *See, e.g.*, ‘949 Patent at
17 1:41-47, 1:57-60; *see also, e.g.*, ‘959 Patent at 6:54-61. These “audio players”
18 were basic “speakers” that passively received and outputted audio signals but
19 lacked processing capabilities. *See, e.g.*, ‘949 Patent at 1:41-60.

20 86. In this conventional “hard-wired” configuration, each audio player
21 relied on a “centralized” device that managed and controlled the multi-zone audio
22 system. Under this approach, audio sources were either hard-wired to the
23 “centralized” device, which made playing different audio sources at different
24 audio players difficult (if not impossible), or hard-wired locally at a given audio
25 player, which “[made] source sharing difficult.” *See, e.g.*, ‘949 Patent at 1:45-56.
26 For example, before an audio player could play audio from a source, a user had to
27 configure the centralized device to route audio to the audio player from the
28 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:



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

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

8 91. The new, unconventional nature of Sonos’s “zone players”
9 introduced additional technological challenges to Sonos’s system, which required
10 Sonos’s “zone players” to have new intelligence enabling the “zone players” to
11 “share information” with one another so that they could “reproduce audio
12 information synchronously,” among other unconventional capabilities. *See, e.g.*,
13 ‘258 Patent at 31:34-41. Thus, Sonos’s new system featured “zone players” that
14 could simultaneously play different audio from different sources or be “grouped”
15 together to play the same audio source in a synchronized manner. *See, e.g.*, ‘258
16 Patent at FIG. 1, 3:50-61, 4:22-50, 5:10-6:64, Claims 1, 11, 17; ‘949 Patent at
17 2:28-48, 9:49-59, Claims 1, 8, 15. And while operating within a “group,” each
18 “zone player” would be designated to take on certain roles or responsibilities
19 within the “group” of “zone players.” *See, e.g.*, ‘001 Patent at 6:58-7:3, 8:2-9:36,
20 Claims 1, 12, 23.

21 92. Further, unlike the “pre-configured and pre-programmed
22 controller[s]” used to control conventional “centralized,” “hard-wired” audio
23 systems, Sonos’s “controller” devices were capable of remotely controlling any
24 “zone player” in a Sonos audio system from anywhere in a user’s house or the like
25 via a data network. *See, e.g.*, ‘949 Patent at 6:43-60; *see also, e.g.*, ‘258 Patent at
26 5:27-29, 5:38-40, 6:37-46. Building on the intelligence of Sonos’s new “zone
27 players,” Sonos’s “controllers” had new capabilities, including dynamically
28 “grouping the zone players” and “control[ling] the volume of each of the zone

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

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

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

13 94. Sonos is the owner of U.S. Patent No. 7,571,014 (the “’014 Patent”),
14 entitled “Method and Apparatus for Controller Multimedia Players in a Multi-
15 Zone System,” which was duly and legally issued by the United States Patent and
16 Trademark Office (“USPTO”) on August 4, 2009. A Reexamination Certificate
17 for the ‘014 Patent was duly and legally issued by the USPTO on September 1,
18 2017. A copy of the ‘014 Patent, including the Reexamination Certificate, is
19 attached hereto as Exhibit 108.

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

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

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

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

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

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

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

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

5 100. In this respect, it was not well-understood, routine, or conventional at
6 the time of the inventions of the ‘014 Patent to have a “controller” configured to
7 (i) form a “zone group” that includes a plurality of “players,” where one of the
8 players serves as a “zone group head,” and (ii) “synchroniz[e] all players in the
9 zone group in accordance with the zone group head.” *See, e.g., id.* at Claims 1,
10 25; *see also, e.g., Ex. 8 (2005 PC Mag:* “[Sonos’s ZonePlayers] can play the same
11 music throughout the house, perfectly synchronized. Even though that may seem
12 drop-dead simple, other hubs don’t do it. And you can join multiple rooms to play
13 the same music ... on the fly.”).

14 101. Furthermore, it was not well-understood, routine, or conventional at
15 the time of the inventions of the ‘014 Patent to have a “controller” configured to
16 (i) display a “zone group” that includes a plurality of “players” and (ii) adjust a
17 “volume meter” for the group of players that is “represented by an averaged value
18 of audio volumes of the players in the group,” which includes “changing a volume
19 of each of the group of players synchronously in accordance with an adjustment
20 made by a user.” *See, e.g., ‘014 Patent at Claims 1, 16, 25, 38; see also, e.g., Ex.*
21 *8 (2005 PC Mag:* “Press the volume-down button, then slide the scroll wheel to
22 select each room and set the volume for it. Once you’re back to using the master
23 volume control, the volume rises or falls relative to each room’s existing setting.
24 These are [] brilliant touches”).

25 102. These are just exemplary reasons why the inventions claimed in the
26 ‘014 Patent were not well-understood, routine, or conventional at the time of their
27 invention.
28

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

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

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

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

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

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

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

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

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

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

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

6 110. Sonos is the owner of U.S. Patent No. 8,588,949 (the “‘949 Patent”),
7 entitled “Method and Apparatus for Adjusting Volume Levels in a Multi-Zone
8 System,” which was duly and legally issued by the USPTO on November 19,
9 2013. A Reexamination Certificate for the ‘949 Patent was duly and legally
10 issued by the USPTO on November 5, 2015. A copy of the ‘949 Patent, including
11 the Reexamination Certificate, is attached hereto as Exhibit 1.

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

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

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

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

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

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

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

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

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

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

19 118. These are just exemplary reasons why the inventions claimed in the
20 ‘949 Patent were not well-understood, routine, or conventional at the time of their
21 invention.

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

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

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

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

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

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

15 123. The group volume control technology of the ‘949 Patent provides
16 significant advantages that are important to wireless audio systems. The
17 advantages of Sonos’s group volume control technology are reflected in the
18 recognition and praise it has received from the press. For example, shortly after
19 Sonos launched its first commercial product in 2005, *PC Magazine* exclaimed:
20 “[Sonos] is the first digital audio hub we can recommend without reservation
21 Once you’re back to using the master volume control, the volume rises or falls
22 relative to each room’s existing setting. These are the brilliant touches” *See*
23 Ex. 8. As another example, in 2005, *Playlist* lauded Sonos’s “Controller” for its
24 “stand[] out” interface that enables dynamic grouping of Sonos players and
25 volume control. *See* Ex. 52. Likewise, in 2008, *Gizmodo* praised Sonos for the
26 ability to “[c]hange the volume in a single room, or in all your rooms at once, all
27 from the Sonos Controller.” *See* Ex. 53. A few years later, in 2012, *Pocket-lint*
28

1 touted Sonos’s patented group volume technology as “simple but clever.” *See*
2 Ex. 54.

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

18 125. The media has also recognized the importance of Sonos’s patented
19 group volume control technology to Google and its customers. For example, in
20 explaining that “[o]ne of the great advantages of having several Google Home
21 speakers is the ability to play the same music throughout your house,” the *Verge*
22 also touted Google’s group and individual volume features. *See* Ex 56.
23 Specifically, the *Verge* explained that you can control group volume if you “go to
24 your Home app and tap on the name of your group,” and that “[i]f you want to
25 raise or lower the volume on a specific speaker in the group, just tap on the icon
26 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

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

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

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

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

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

1 capable of sharing particular information over a data network to facilitate
2 “reproduc[ing] audio information synchronously” despite the fact that the “zone
3 players operate with independent clocks” and exchange packets over a data
4 network with “differing delays.” ‘258 Patent at 31:34-41.

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

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

25 135. These are just exemplary reasons why the inventions claimed in the
26 ‘258 Patent were not well-understood, routine, or conventional at the time of their
27 invention.
28

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

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

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

19 141. As another example, in advertising the “Multi-room audio”
20 capability of its wireless audio products on its website, Google touts that you can
21 “[g]roup any combination of Google Home, Chromecast Audio, or speakers with
22 Chromecast together for synchronous music throughout the home.” See, e.g., Ex.
23 61. Likewise, Google’s website includes a webpage entitled “Create and manage
24 speaker groups,” which promotes grouping and synchronized audio playback in
25 the very first sentence: “Group any combination of Google Nest or Google Home
26 speakers and displays, Chromecast devices, and speakers with Chromecast built-
27 in together for synchronous music throughout the home.” See, e.g., Ex. 29.
28

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,

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

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

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

14 147. Given the state of the art at the time of the inventions of the ‘959
15 Patent, including the deficiencies in centralized, hard-wired multi-zone audio
16 systems of the time that required “physically connecting and re-connecting
17 speaker wire . . . to create different configurations,” the inventive concepts of the
18 ‘959 Patent cannot be considered to be conventional, well-understood, or routine.
19 *See, e.g.*, ‘959 Patent at 6:54-58. The ‘959 Patent provides an unconventional
20 solution to problems that arose in the context of centralized, hard-wired multi-
21 zone audio systems – namely, that the technology of such systems made it
22 difficult (if not impossible) to “group, consolidate, and pair” “individual, discrete
23 speakers” into different “desired configurations.” *See, e.g., id.* In this respect,
24 unlike conventional hard-wired multi-zone audio systems, the ‘959 Patent
25 provided unconventional technology including a “controller” with a “control
26 interface” through which “actions of grouping, consolidation, and pairing [were]
27 performed,” and a “playback device” with processing intelligence capable of
28

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

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

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

23 150. These are just exemplary reasons why the inventions claimed in the
24 ‘959 Patent were not well-understood, routine, or conventional at the time of their
25 invention.

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

1 152. Notably, the District Court of Delaware held that the claimed
2 inventions of the ‘959 Patent are “patent-eligible subject matter under § 101.” Ex.
3 51 at p. 16. In particular, the district court recognized that the claimed inventions
4 of the ‘959 Patent represent a “substantial improvement” over the existing
5 technology. *Id.* at p. 15.

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

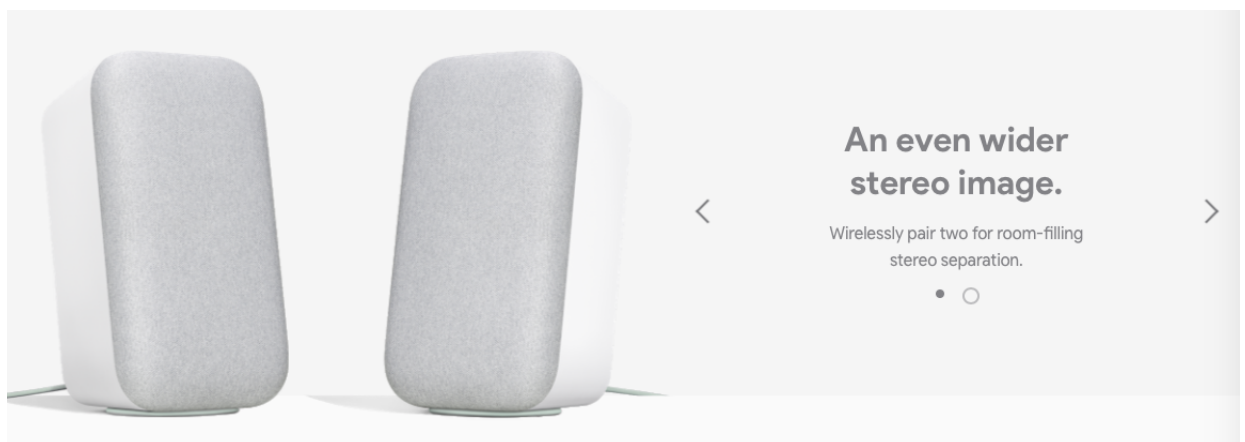
17 154. Moreover, the innovative and unconventional nature of the ‘959
18 Patent was confirmed by the validity findings in the ‘959 Patent reexamination
19 proceeding. *See* Ex. 3.

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

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

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

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



26 157. *Id.* Likewise, Google’s Home Max product webpage also notes the
27 “[w]ireless stereo pairing” functionality in the “Tech Specs” section. Ex. 68.
28

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

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

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

19 161. In the same vein, when Google recently announced that it will be
20 upgrading its Google Home and Home Mini to support stereo pairing, *9to5Google*
21 recognized that “Google is expanding stereo speaker pairing to the original
22 Google Home and Google Home Mini” and called stereo pairing “[o]ne of the
23 best features.” Ex. 74. Likewise, in response to Google’s recent announcement,
24 *Digital Trends* published an article entitled “Finally, stereo speaker pairing comes
25 to the Google Home and Home Mini,” which explained that stereo pairing is part
26 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 First 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 First 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.

1 168. At the core of the ‘715 Patent are unconventional system components
2 – “zone players” and a “controller device” that operate on a data network. Each
3 “zone player” was unconventionally equipped with intelligence enabling it to
4 perform a “master device role” for the “synchrony group.” *See, e.g.*, ‘715 Patent,
5 6:58-7:3, 8:2-26, 8:31-38, Claims 1, 7, 13. While performing the “master device
6 role,” the “zone player” was unconventionally capable of dynamically delegating
7 the “master device role” to another “zone player” in the “synchrony group.” *See,*
8 *e.g.*, ‘715 Patent, 8:38-9:4, 10:60-11:4, 13:22-36, 16:3-18:15, Claims 1, 7, 13.

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

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

22 171. These are just exemplary reasons why the inventions claimed in the
23 ‘715 Patent were not well-understood, routine, or conventional at the time of their
24 invention.

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

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

6 173. Moreover, the dynamic master-delegation technology of the ‘715
7 Patent provides advantages that are important to wireless audio systems. In fact,
8 recognizing the advantages of Sonos’s patented dynamic master-delegation
9 technology, competitors in the industry, including Google, have incorporated
10 Sonos’s patented technology into their products and touted the benefits that the
11 technology enables. For example, while publicly testifying, Google’s engineers
12 touted the “adaptive,” “automatic” (“without user intervention”) and “resilient”
13 characteristics of Google’s accused “leader election” feature that infringes the
14 ‘715 Patent. *See, e.g.*, Ex. 122, 1247:2-7, 1251:3-1252:9; *id.*, 1300:16-1301:4.

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

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

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

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

23 177. Sonos incorporates by reference and re-alleges the foregoing
24 paragraph numbers 126-30 of this First Amended Complaint as if fully set forth
25 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 First 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*

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

3 182. Further yet, it was not well-understood, routine, or conventional at
4 the time of the invention of the ‘953 Patent to have a “zone player” that, after
5 beginning to operate as a “slave” of a synchrony group, functions to receive, from
6 another “zone player” operating as a “master” of the synchrony group over a
7 LAN, (a) audio information for an audio track and (b) playback timing
8 information associated with the audio information for the audio track that
9 comprises an indicator of a future time at which the “zone players” are to initiate
10 synchronous playback of the audio information. *See, e.g.*, ‘953 Patent at Claims
11 1, 7, 25; *see also, e.g.*, Ex. 6. It was also not well-understood, routine, or
12 conventional at the time of the invention of the ‘953 Patent to have a “zone
13 player” that, after beginning to operate as a “slave” of a synchrony group,
14 functions to perform the aforementioned operations as well as functions to (i)
15 update the future time to account for a determine differential between the clock
16 time of the “zone player” and the clock time of the “master” “zone player” and
17 (ii) initiate synchronous playback of the received audio information with the
18 “master” “zone player” when the clock time of the “zone player” reaches the
19 updated future time. *See, e.g.*, ‘953 Patent at Claims 1, 7, 25; *see also, e.g.*, Ex. 6.

20 183. These are just exemplary reasons why the inventions claimed in the
21 ‘953 Patent were not well-understood, routine, or conventional at the time of their
22 invention.

23 184. As with the ‘258 Patent, the unconventional nature of the ‘953 Patent
24 has also been confirmed by wide-spread industry praise for the patented
25 technology of the ‘953 Patent as an advancement in the field of home audio.
26
27
28

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

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

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

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

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

14 188. The ‘896 Patent relates generally to devices, methods, and computer-
15 readable media for connecting a “zone player” (or “playback device”) to a secure
16 wireless local area network (WLAN), thereby setting up the zone player for use in
17 a networked audio system.

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

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

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

11 191. The ‘896 Patent also recognized that a device that has yet to be setup
12 on a network has “limited networking capability” and is not addressable by other
13 devices, which presents technical challenges as to how that device can receive
14 information that facilitates the device’s setup to operate on the network. *See, e.g.,*
15 ‘896 Patent at 11:4-14.

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

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

23 193. Given the state of the art at the time of the inventions of the ‘896
24 Patent, including the deficiencies in conventional device-setup technology of the
25 time, the inventive concepts of the ‘896 Patent cannot be considered to be
26 conventional, well-understood, or routine. *See, e.g.,* ‘896 Patent at 1:37-2:4. The
27 ‘896 Patent provides an unconventional solution to problems arising in the context
28 of connecting “consumer electronic devices” (*e.g.*, “home entertainment

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

6 194. In this respect, the ‘896 Patent provided a technological solution that
7 addressed the limited-networking-capability and addressability problems with
8 existing setup technologies. *See, e.g.*, ‘896 Patent at 11:4-37. Moreover, unlike
9 conventional device-setup technology whose complexity made it “impractical” for
10 “average consumers to . . . hook up consumer electronic devices” to a requisite
11 data network, the ‘896 Patent provided a technological solution that made it easier
12 for consumers to connect a consumer electronic device to a data network. *See,*
13 *e.g., id.* at 1:37-67.

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

20 196. Moreover, it was not well-understood, routine, or conventional at the
21 time of the inventions of the ‘896 Patent to have a “computing device” configured
22 to (i) transmit a response to a first message that facilitates establishing with a
23 “playback device” an “initial communication path” that does not traverse an
24 access point defining a secure WLAN, (ii) transmit “network configuration
25 parameters” for the secure WLAN to the “playback device” via the “initial
26 communication path,” and (iii) transition from communicating with the given
27 “playback device” via the “initial communication path” to communicating with
28

1 the given “playback device” via the secure WLAN. *See, e.g.*, ‘896 Patent at
2 Claims 1, 13, 20; *see also, e.g., id.* at 11:4-37.

3 197. Additionally, it was not well-understood, routine, or conventional at
4 the time of the inventions of the ‘896 Patent to have a “computing device”
5 configured to perform the specific combination of (i) while operating on a secure
6 WLAN defined by an access point, (a) receiving “user input indicating that a user
7 wishes to set up a playback device” to operate on the secure WLAN and
8 (b) receiving a first message indicating that a “given playback device is available
9 for setup,” (ii) transmitting a response to the first message that facilitates
10 establishing with the given playback device an “initial communication path” that
11 does not traverse the access point, (iii) transmitting, to the given “playback
12 device” via the “initial communication path,” a second message containing
13 “network configuration parameters” for the secure WLAN, (iv) after detecting an
14 indication that the given “playback device” has successfully received the
15 “network configuration parameters,” transitioning from communicating with the
16 given “playback device” via the “initial communication path” to communicating
17 with the given “playback device” via the secure WLAN. *See, e.g.*, ‘896 Patent at
18 Claims 1, 13, 20; *see also, e.g., id.* at 11:4-37.

19 198. These are just exemplary reasons why the inventions claimed in the
20 ‘896 Patent were not well-understood, routine, or conventional at the time of their
21 invention.

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

25 200. Moreover, the ‘896 Patent’s solutions are naturally rooted in
26 consumer device-setup technology and cannot be performed solely by a human.
27 Indeed, the ‘896 Patent’s claimed solutions provide a device-setup process
28

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

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

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

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

15 Ex. 76.

16 202. Likewise, *Gizmodo* touted Sonos's patented playback-device-setup
17 technology as "so easy that anybody can do it." Ex. 77. And *Consumer Reports*
18 explained that Sonos's playback-device-setup technology is "pretty simple." Ex.
19 78.

20 203. Recognizing the advantages of Sonos's patented playback-device-
21 setup technology, competitors in the industry, including Google, have
22 incorporated Sonos's patented technology into their products and marketed the
23 features that the technology enables to their customers. For example, to market its
24 Google Audio Players on its website, Google includes a dedicated "Setup" tab
25 that touts how "[g]etting set up is simple." See, e.g., Ex. 79. As another example,
26 Google's website includes a webpage entitled "Set up your Google Nest or
27 Google Home speaker or display," which explains that "[t]he Google Home app
28

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

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

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

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

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

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

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

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

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

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

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

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

20 213. Moreover, it was not well-understood, routine, or conventional at the
21 time of the inventions of the ‘001 Patent to have a “zone player” configured to,
22 after receiving a request to engage in synchronous playback of audio content as
23 part of a synchrony group, operate in the synchrony group in accordance with a
24 detected indication that the “zone player” is to operate in either a “control-master
25 mode” or “control-slave mode” for the synchrony group and in either an “audio-
26 master mode” or “audio-slave mode” for the synchrony group. *See, e.g.*, ‘001
27 Patent at Claims 1, 12, 23.
28

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

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

12 216. Furthermore, it was not well-understood, routine, or conventional at
13 the time of the inventions of the '001 Patent to have a "zone player" programmed
14 such that, while operating in the "audio-master mode," it functions to (i) obtain
15 audio information representative of audio content, (ii) generate playback timing
16 information indicative of at least one future time relative to a reference clock time
17 that denotes a time at which the "zone player" and at least one other "zone player"
18 are to engage in synchronous playback of a corresponding portion of the obtained
19 audio information, and (iii) transmit the audio information and the playback
20 timing information to the other "zone player." *See, e.g.,* '001 Patent at Claims 1,
21 12, 23.

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

1 218. These are just exemplary reasons why the inventions claimed in the
2 '001 Patent were not well-understood, routine, or conventional at the time of their
3 invention.

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

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

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

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

16 221. Sonos incorporates by reference and re-alleges paragraphs 85-109 of
17 this First Amended Complaint as if fully set forth herein.

18 222. Google and/or users of the Google Wireless Audio System have
19 directly infringed (either literally or under the doctrine of equivalents) and
20 continue to directly infringe one or more of the claims of the '014 Patent, in
21 violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling
22 the Google Wireless Audio System within the United States and/or importing the
23 Google Wireless Audio System into the United States without authority or
24 license.

25 223. As just one non-limiting example, set forth below is an exemplary
26 infringement claim chart for claim 25 of the '014 Patent in connection with the
27 Google Wireless Audio System. This claim chart is based on publicly available
28 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.

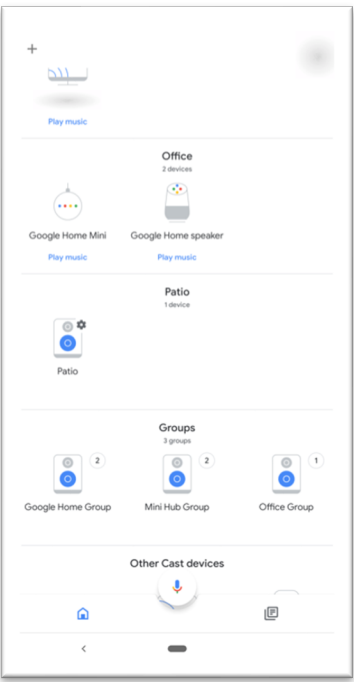
Claim 25	Google
[25.0] An apparatus for controlling a plurality of players, the apparatus comprising:	At least each smartphone, tablet, and computer installed with the Google Home app, the YouTube Music app, and/or the Google Play Music app (where a computing device installed with at least one of these 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. <i>See, e.g.</i> , 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, 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. <i>See, e.g.</i> , 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

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.

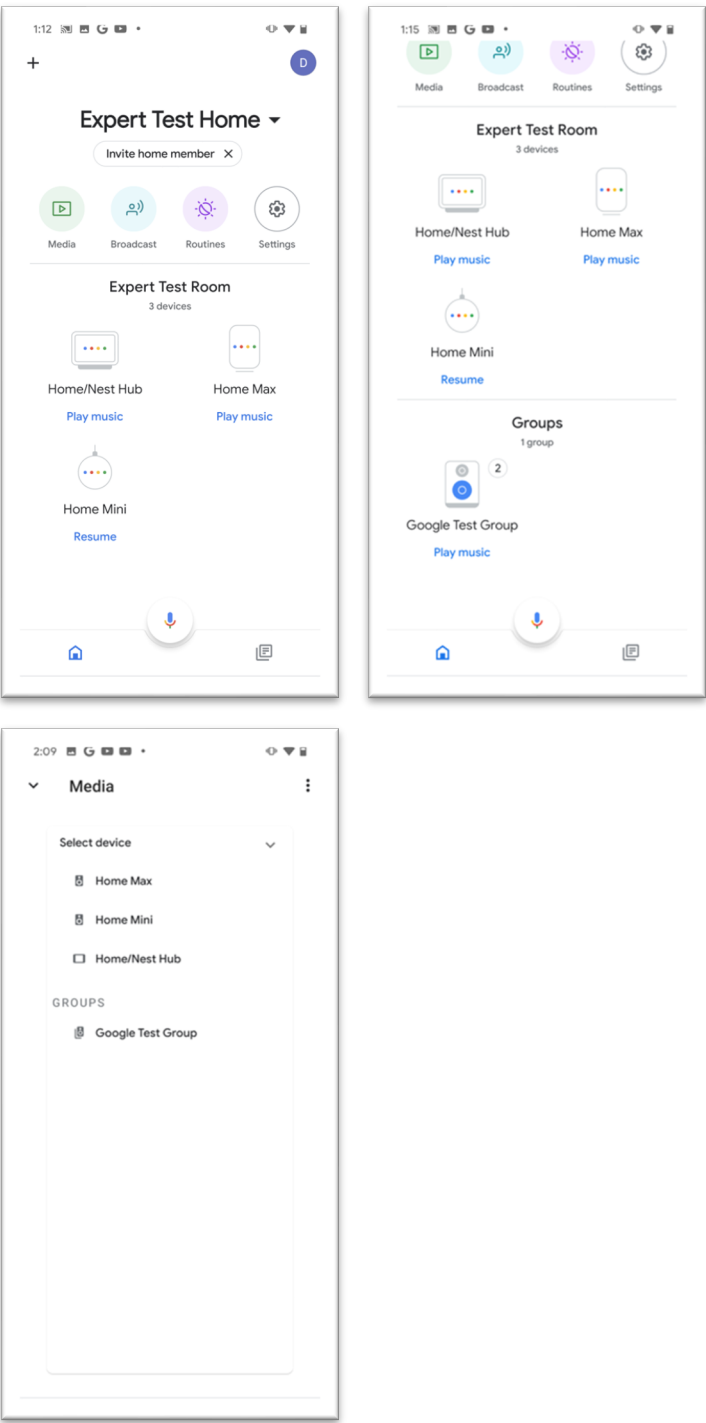
⁵ In addition to being configured as a “player,” as recited in claim 25, each Home Hub, Nest Hub, and Nest Hub Max (referred to herein as a “Hub Audio Player”) is installed with Home/Nest Hub software such that the given Hub Audio Player is configured as an “apparatus for controlling a plurality of players,”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

1	Claim 25	Google
2		commanding the screen. <i>See, e.g.</i> , Exs. 40-43, 87-92.
3	[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. <i>See, e.g.</i> , Exs. 40-43, 87-92.
4		
5		
6	[25.4] a network interface;	Each Chromecast-enabled computing device and Hub Audio Player comprises a network interface, such as a WiFi interface. <i>See, e.g.</i> , Exs. 40-43, 87-92.
7		
8		
9	[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. <i>See, e.g.</i> , Exs. 34-43, 87-92.
10		
11	[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. <i>See, e.g.</i> , Exs. 40-43, 87-92.
12		
13		
14		
15		
16		
17	[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 capability to display on a screen a first list showing at least available Google Audio Players.
18		
19		
20		
21		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.
22		
23		
24		
25		This functionality is evidenced by the exemplary screenshots/images below:
26		
27		<u>Google Home app</u>
28		

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25	Google
	

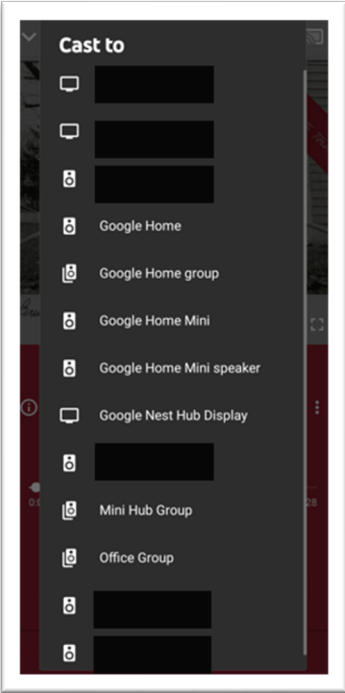
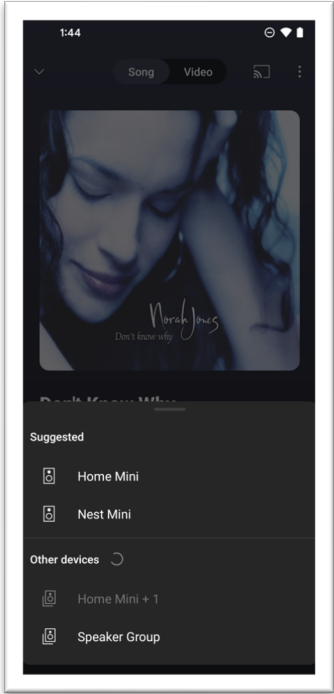
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25	Google
	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

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

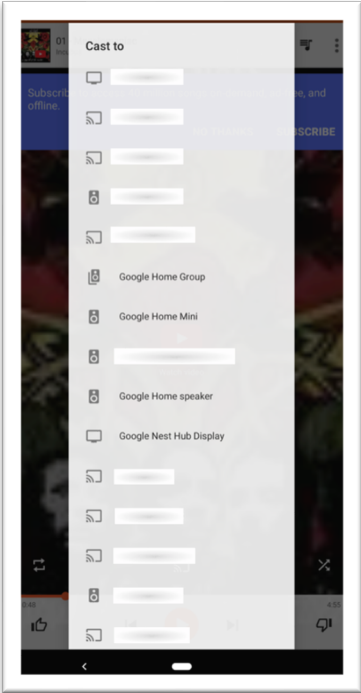
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

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

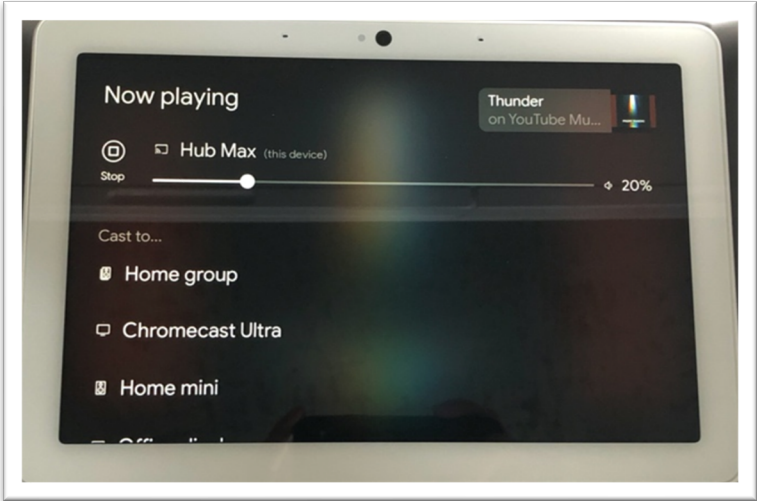
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25

Google



Hub Audio Player



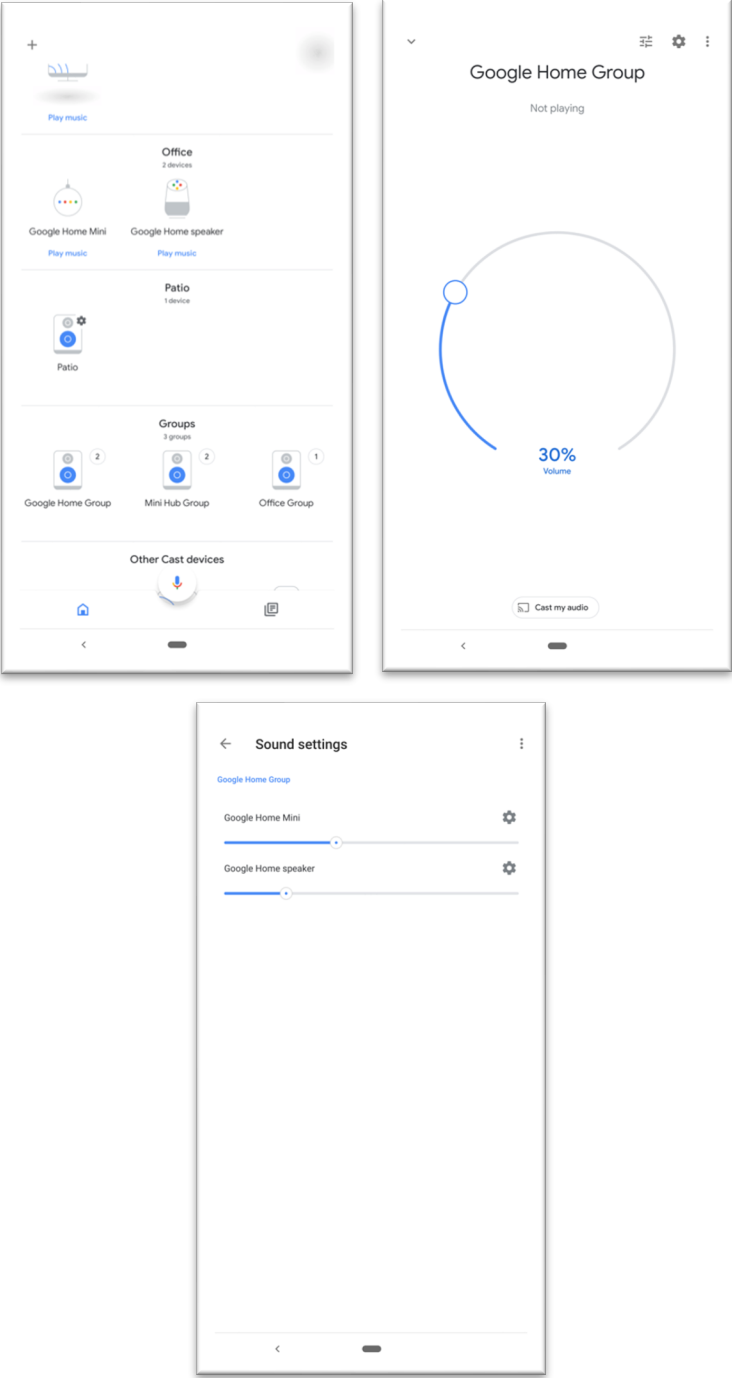
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25	Google
[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;	<i>See also, e.g., Exs. 93, 123, 124.</i> 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. <i>See, e.g., Ex. 29</i> (“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

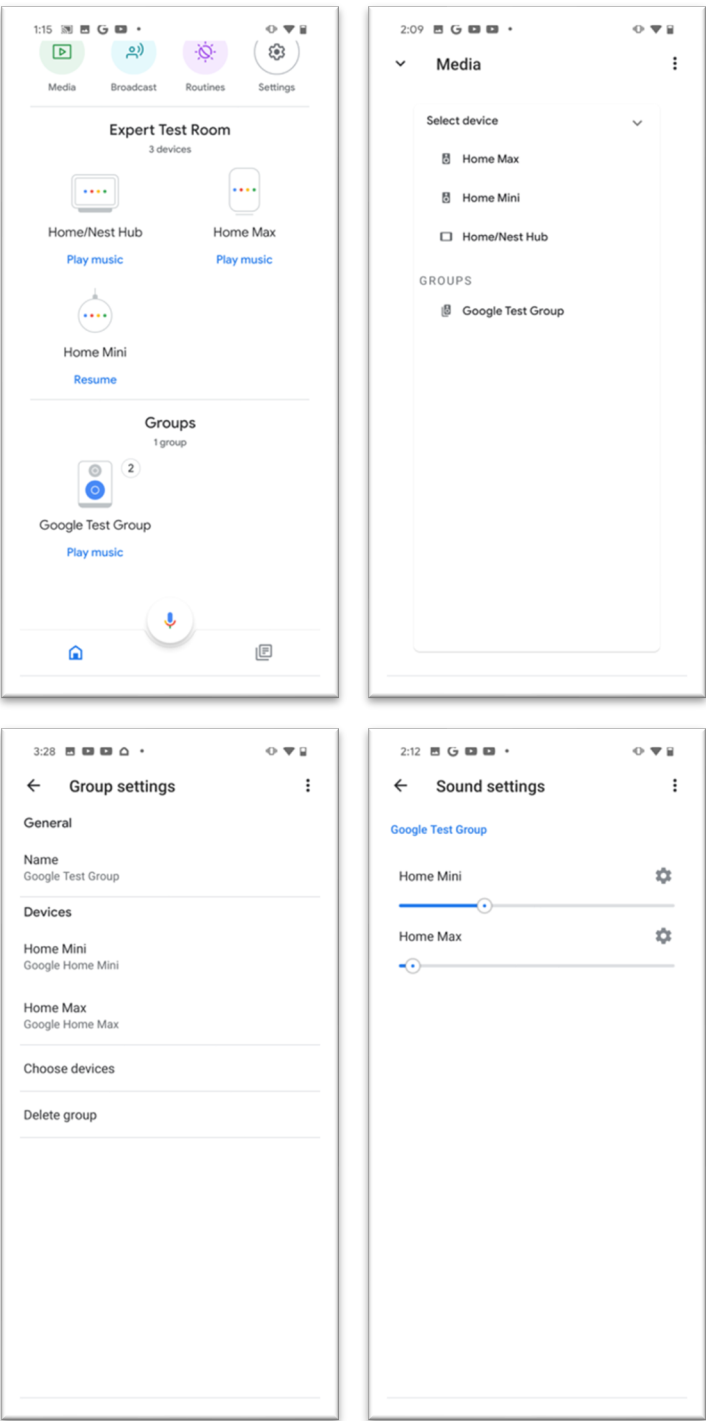
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

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). <i>See, e.g.</i>, 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: <u>Google Home app</u>

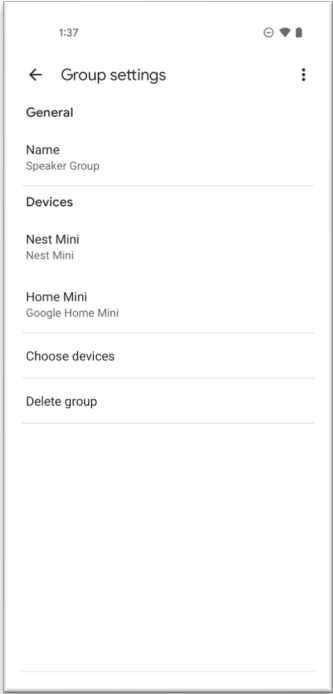
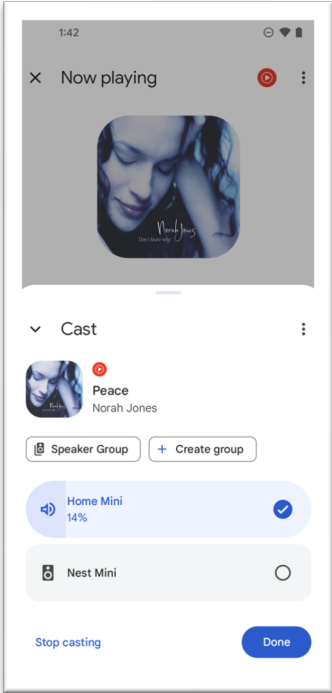
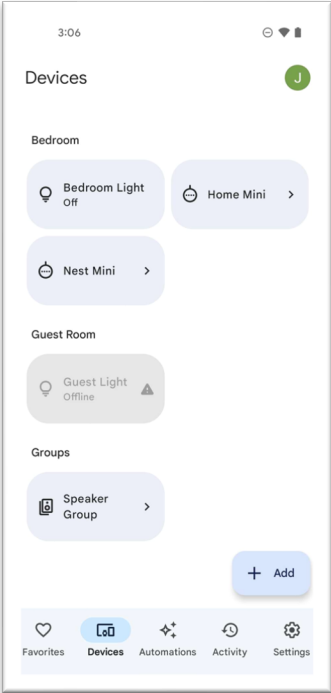
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25	Google
	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25	Google
	 The figure displays four screenshots of the Google Home mobile application interface, arranged in a 2x2 grid. The top-left screenshot shows the 'Expert Test Room' screen at 1:15, featuring a '3 devices' section with 'Home/Nest Hub' (Play music), 'Home Max' (Play music), and 'Home Mini' (Resume), and a 'Groups' section with 'Google Test Group' (Play music). The top-right screenshot shows the 'Media' screen at 2:09, with a 'Select device' dropdown listing 'Home Max', 'Home Mini', and 'Home/Nest Hub', and a 'GROUPS' section listing 'Google Test Group'. The bottom-left screenshot shows the 'Group settings' screen at 3:28, with sections for 'General' (Name: Google Test Group), 'Devices' (Home Mini, Home Max), 'Choose devices', and 'Delete group'. The bottom-right screenshot shows the 'Sound settings' screen at 2:12, with a 'Google Test Group' header and volume sliders for 'Home Mini' and 'Home Max'.

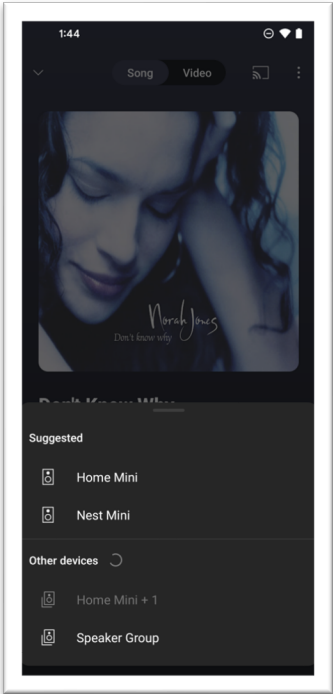
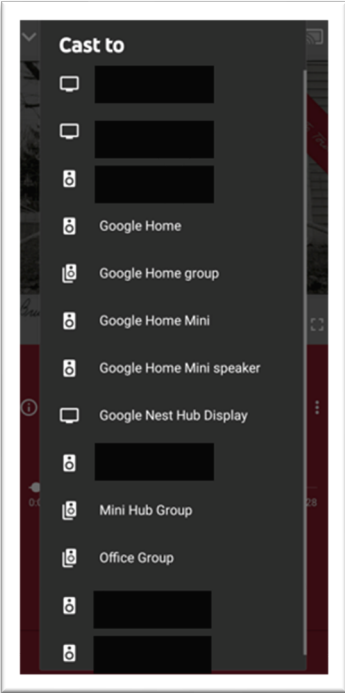
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

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

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25

Google

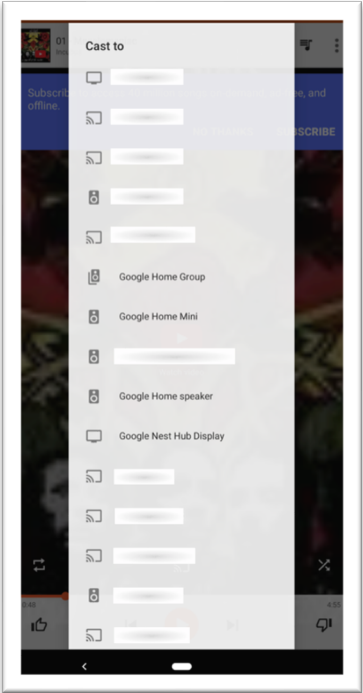


Google Play Music app

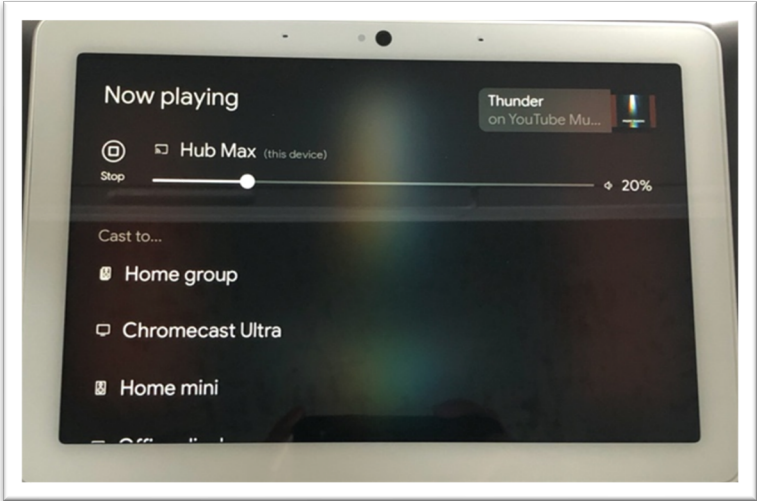
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25

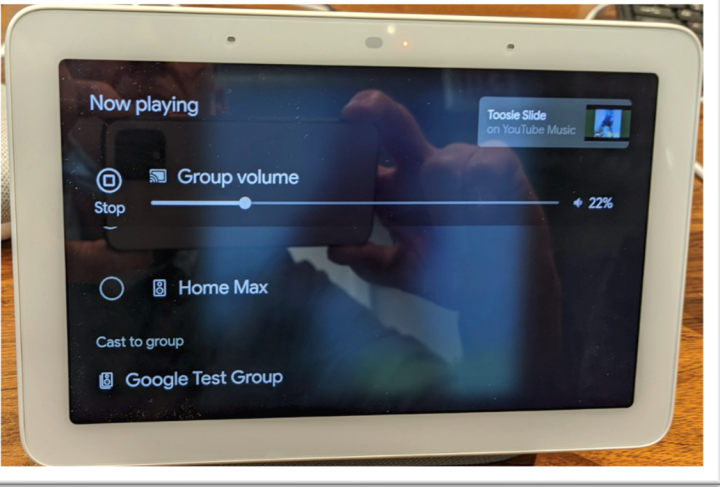
Google



Hub Audio Player



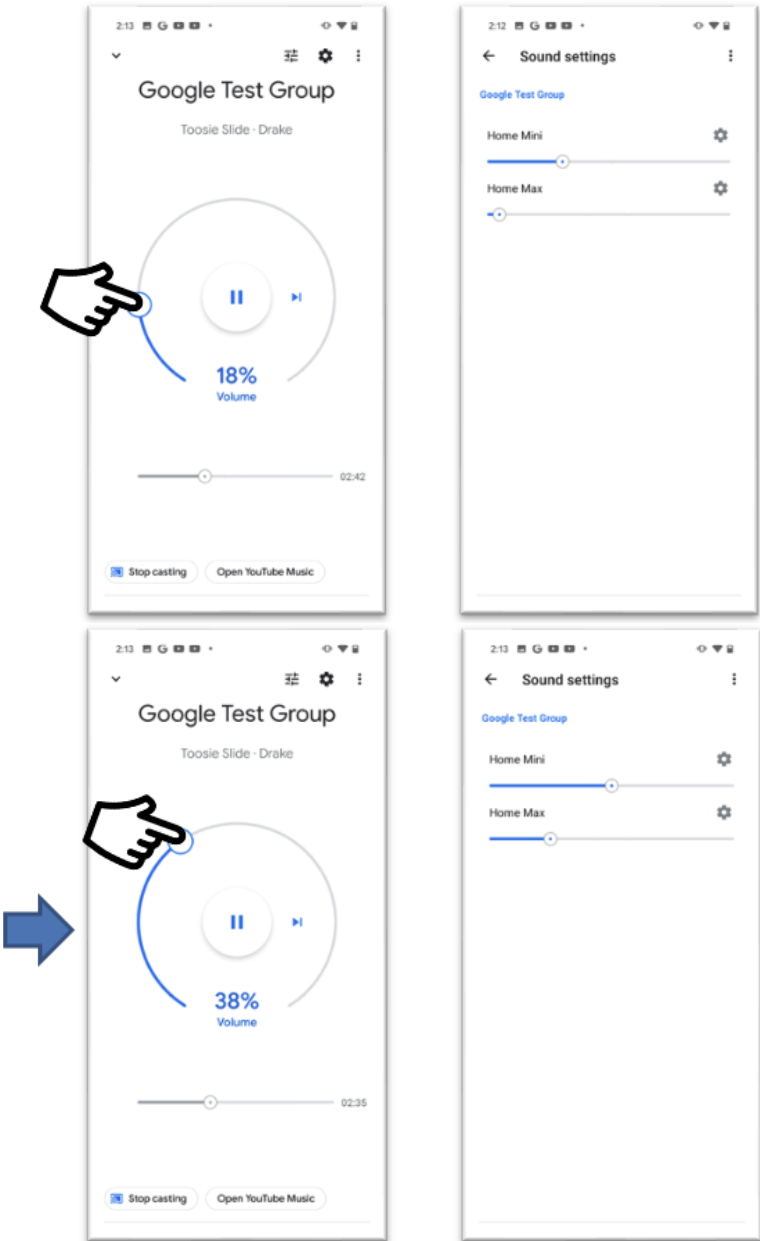
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

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. <i>See, e.g.</i>, 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

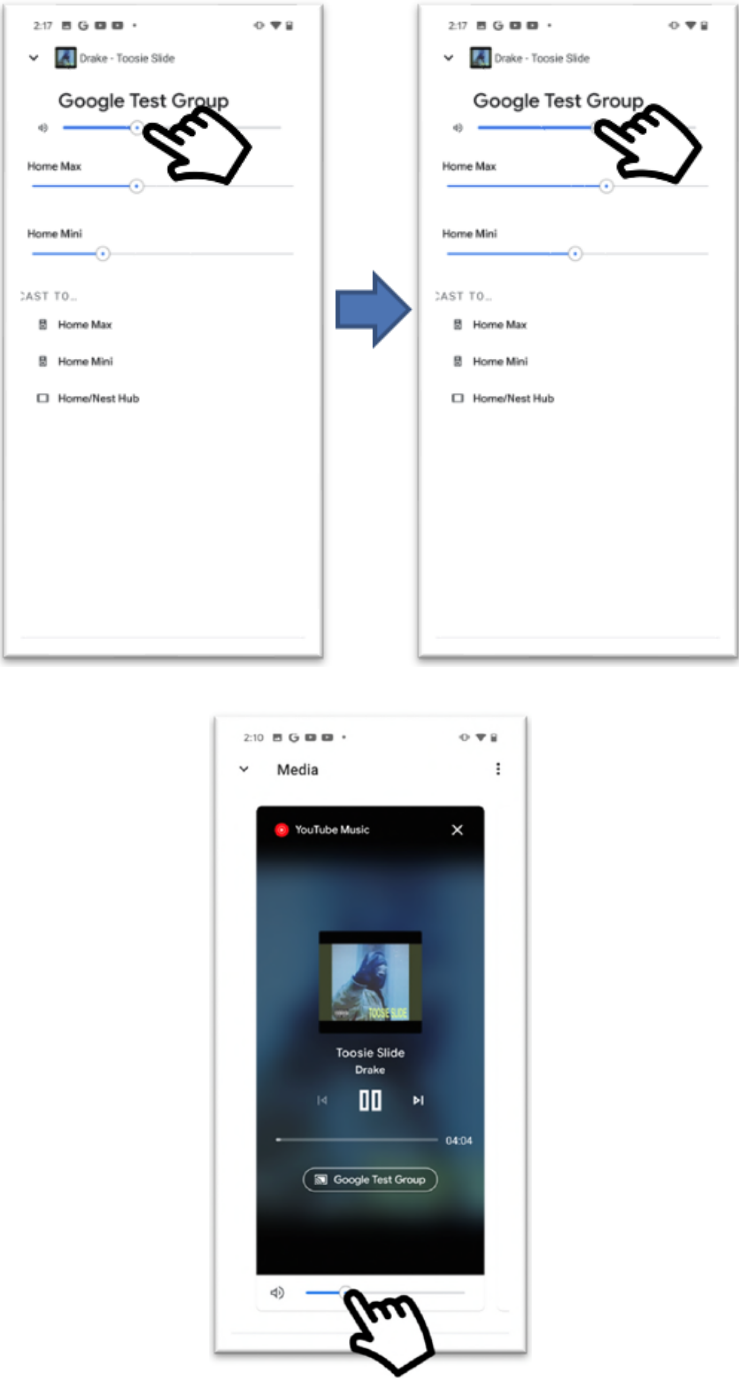
1	Claim 25	Google
2		playing media.”); Exs. 20, 61, 84, 93-94, 104, 106,
3		123, 124; Ex. 122, 1259:20-1260:5, 1268:23-
4	[25.10] adjusting a volume	Each Chromecast-enabled computing device and
5	meter represented by an	Hub Audio Player is programmed with the
6	averaged value of audio	capability to adjust a volume meter represented by
7	volumes of the players in the	an averaged value of audio volumes of Google
8	group, wherein said adjusting	Audio players in a group, wherein said adjusting of
9	of the volume meter includes	the volume meter includes changing a volume of
10	changing a volume of each of	each of the group of Google Audio players
11	the group of players	synchronously in accordance with an adjustment
12	synchronously in accordance	made by a user.
13	with an adjustment made by	
14	a user.	As an example, each Chromecast-enabled
15		computing device and Hub Audio Player is
16		programmed with the capability to display a
17		volume meter representing a “group volume” for
18		the Google Audio players in the group, where the
19		“group volume” meter is represented by an
20		averaged value of the individual volumes of the
21		Google Audio players in the group. Each
22		Chromecast-enabled computing device and Hub
23		Audio Player is also programmed with the
24		capability to adjust the “group volume” meter for
25		the Google Audio players in the group, which
26		includes changing the individual volume of each
27		Google Audio player in the group synchronously
28		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

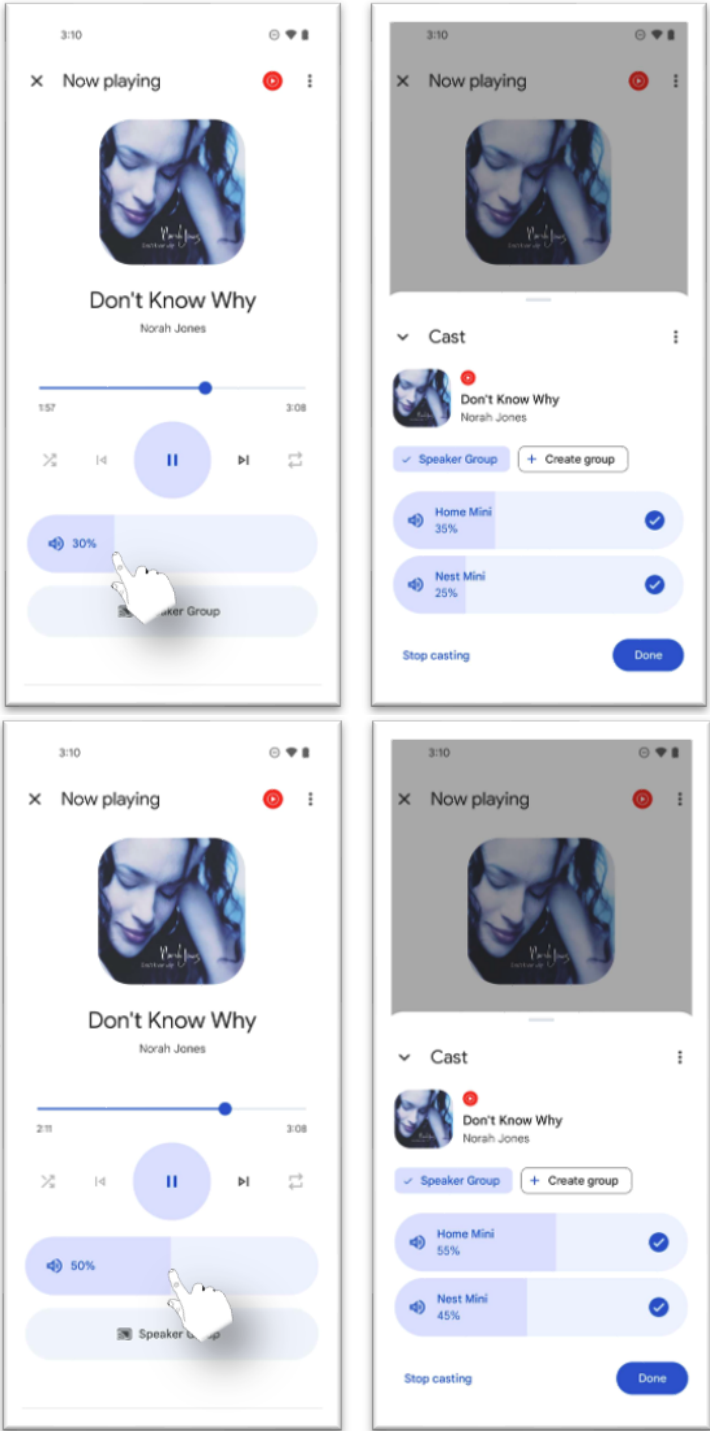
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

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> 

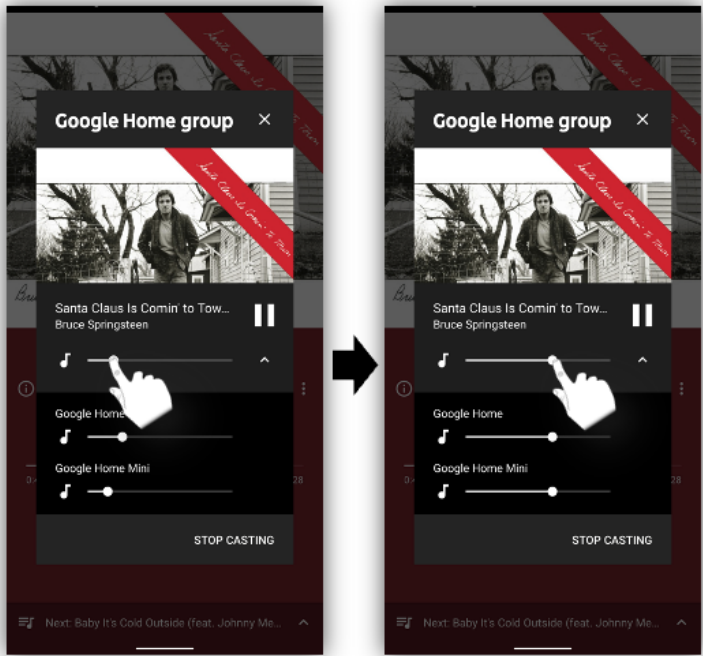
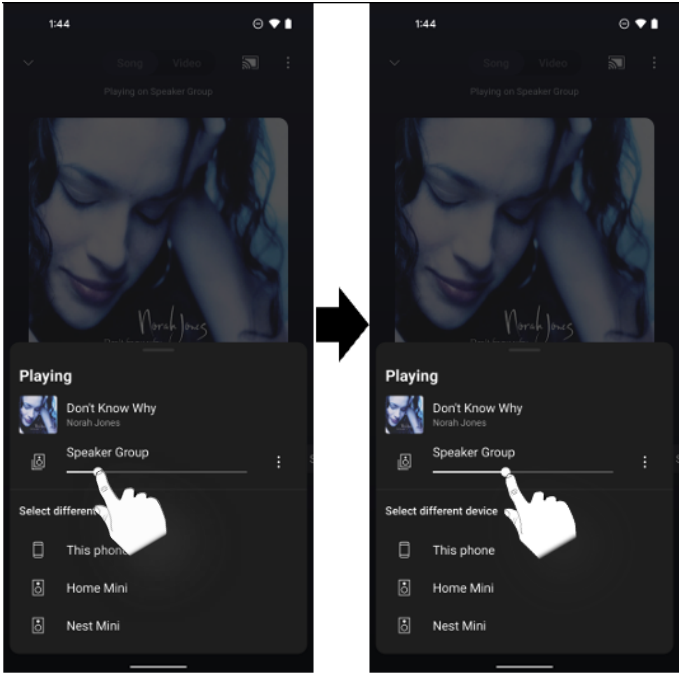
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25	Google
	

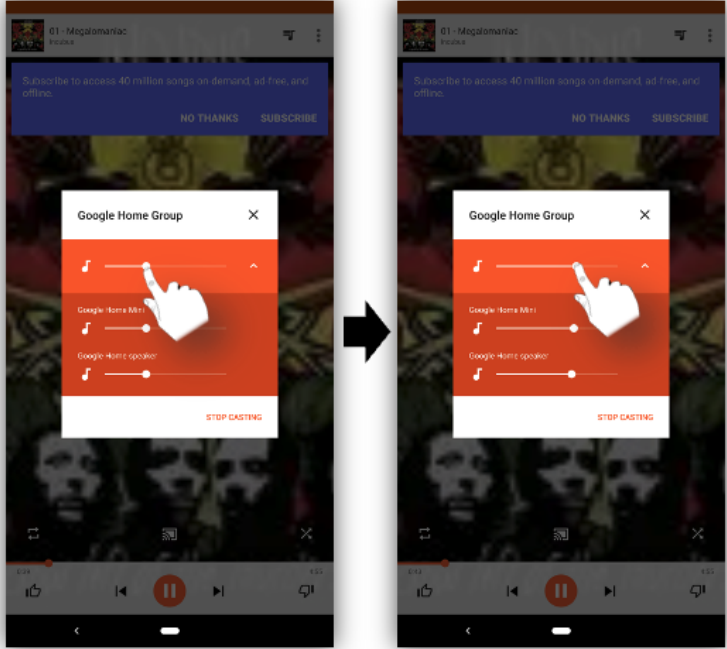
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25	Google
	 The diagram illustrates the Google YouTube Music app interface in two states, connected by a large black arrow pointing from the top row to the bottom row. The top row shows the 'Now playing' screen with the song 'Don't Know Why' by Norah Jones. The volume slider is set to 30%, and the 'Cast' screen shows two speakers: 'Home Mini' at 35% and 'Nest Mini' at 25%. The bottom row shows the same screens, but the volume slider is now at 50%, and the speakers are at 55% and 45% respectively. A hand icon is shown interacting with the volume slider in both states.
	<u>YouTube Music app</u>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

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

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25	Google
	 Hub Audio Player

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 25

Google

The first screenshot shows the 'Now playing' screen with 'Lucky' by Bruno Mars. It features three volume sliders: 'Group volume' at 27%, 'Google Home' at 30%, and 'Google Home Mini' at 23%. A hand icon is shown adjusting the 'Group volume' slider. A 'Cast to...' option is visible at the bottom.

The second screenshot, indicated by a large black arrow, shows the same interface but with the 'Group volume' slider increased to 60%, 'Google Home' at 63%, and 'Google Home Mini' at 57%.

The third screenshot shows a different set of speakers. The 'Now playing' screen displays 'Hide (feat. Saezryn)' by Red Hot Chili Peppers. It features three volume sliders: 'Group volume' at 30%, 'Bedroom Speaker' at 20%, and 'Office speaker' at 40%. A hand icon is shown adjusting the 'Group volume' slider. A 'Hub Speaker (this device)' option is visible at the bottom.

Claim 25	Google
	

224. 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 this 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

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

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

9 226. Additionally and/or alternatively, Google has indirectly infringed and
10 continues to indirectly infringe one or more of the claims of the '014 Patent, in
11 violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United
12 States, and/or importing into the United States, components in connection with the
13 Google Wireless Audio System that contribute to the direct infringement of the
14 '014 Patent by users of the Google Wireless Audio System. In particular, (a)
15 Google had actual knowledge of the '014 Patent or was willfully blind to its
16 existence prior to (at least as early as September 2016), and no later than, the
17 filing of this First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers
18 for sale, sells, and/or imports, in connection with the Google Wireless Audio
19 System, one or more material components of the invention of the '014 Patent that
20 are not staple articles of commerce suitable for substantial noninfringing use, (c)
21 Google knows (or should know) that such component(s) were especially made or
22 especially adapted for use in an infringement of the '014 Patent, and (d) users of
23 devices that comprise such material component(s) directly infringe one or more
24 claims of the '014 Patent. For instance, at a minimum, Google offers for sale,
25 sells, and/or imports the Google Apps for installation on devices (e.g.,
26 smartphones, tablets, and computers) that meet one or more claims of the '014
27 Patent. *See, e.g., Exs. 29, 34-39, 55.* The Google Apps are material components
28 of the devices that meet the one or more claims of the '014 Patent. Further,

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

6 227. As another example, Google offers for sale, sells, and/or imports
7 software updates for Hub Audio Players that meet one or more claims of the '014
8 Patent. *See, e.g.*, Exs. 29, 84, 85. These software updates are material
9 components of the Hub Audio Players that meet the one or more claims of the
10 '014 Patent. Further, Google especially made and/or adapted these software
11 updates for use in the Hub Audio Players that meet the one or more claims of the
12 '014 Patent, and these software updates are not staple articles of commerce
13 suitable for substantial noninfringing use. Google's customers then directly
14 infringe the one or more claims of the '014 Patent by installing and using software
15 updates on the Hub Audio Players.

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

24 229. Additional allegations regarding Google's pre-suit knowledge of the
25 '014 Patent and willful infringement will likely have evidentiary support after a
26 reasonable opportunity for discovery.

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

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

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

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

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

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

13 235. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
14 110-25 of this First Amended Complaint as if fully set forth herein.

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

22 237. As just one non-limiting example, set forth below is an exemplary
23 infringement claim chart for claim 1 of the '949 Patent in connection with the
24 Google Wireless Audio System. This claim chart is based on publicly available
25 information. Sonos reserves the right to modify this claim chart, including, for
26 example, on the basis of information about the Google Wireless Audio System
27 that it obtains during discovery.
28

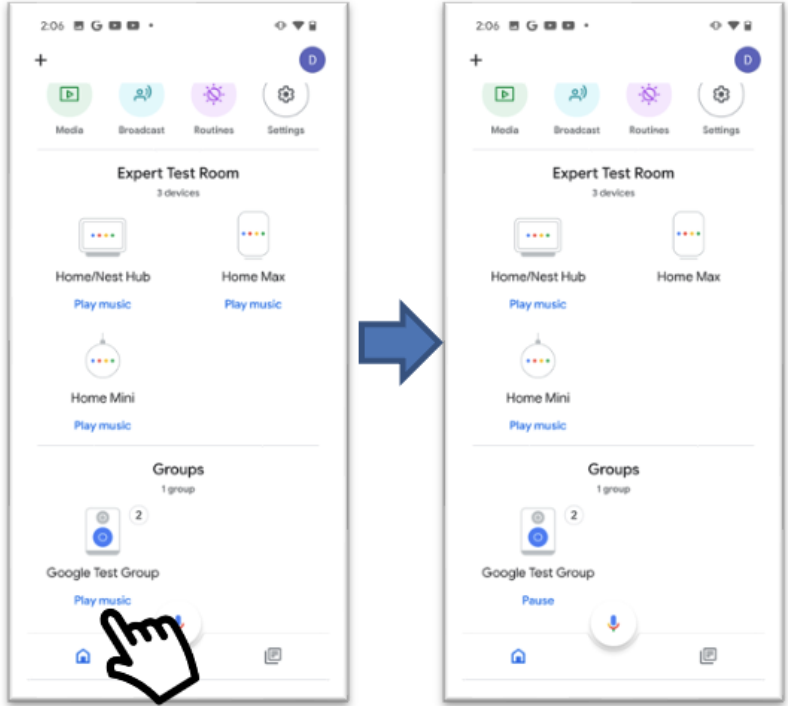
Claim 1	Google
A multimedia controller including a processor, the controller configured to:	At least each smartphone, tablet, and computer installed with the Google Home app, the YouTube Music app, and/or the Google Play Music app (where a computing device installed with at least one of these apps is referred to herein as a “Chromecast-enabled computing device” ⁶) comprises a “multimedia controller including a processor,” as recited in claim 1. <i>See, e.g.</i> , 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;	(<i>e.g.</i>, via a Google Home, YouTube Music, Google Play Music, or Hub Audio Player user interface). <i>See, e.g.</i>, 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 (<i>e.g.</i>, Google Play Music, Spotify, etc.). <i>See e.g.</i>, 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 (<i>e.g.</i>, 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. <i>See, e.g.</i>, 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

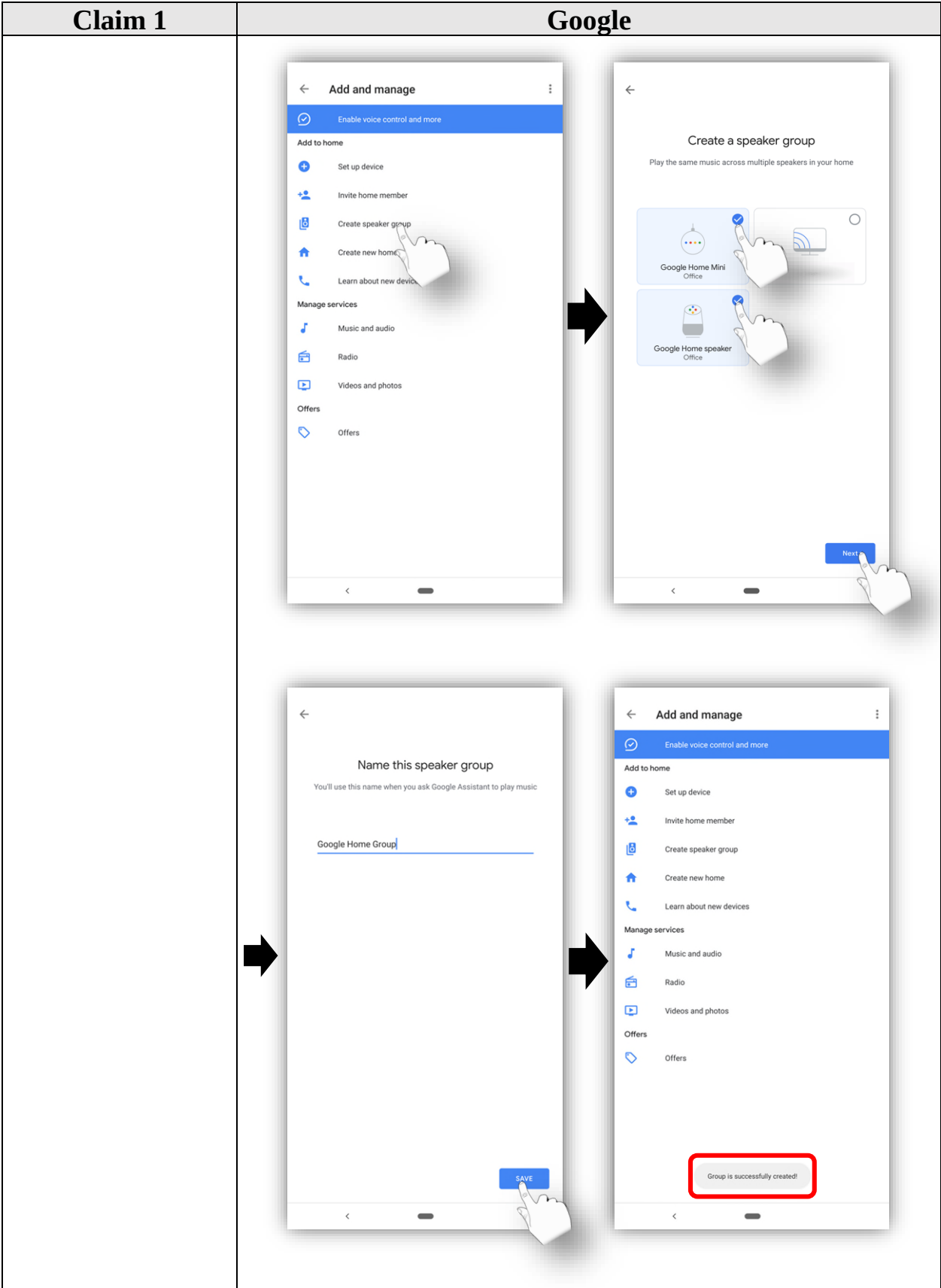
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

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> 

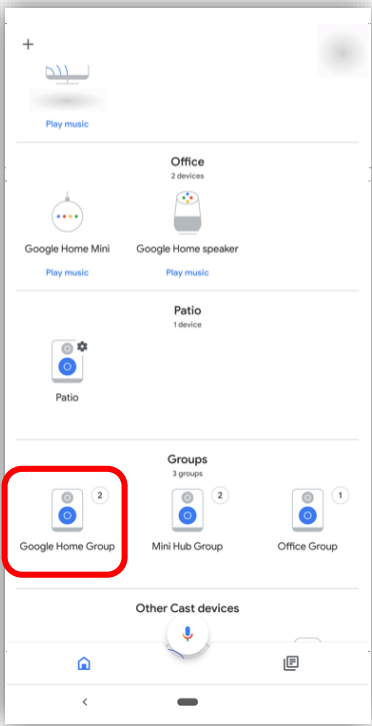
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28



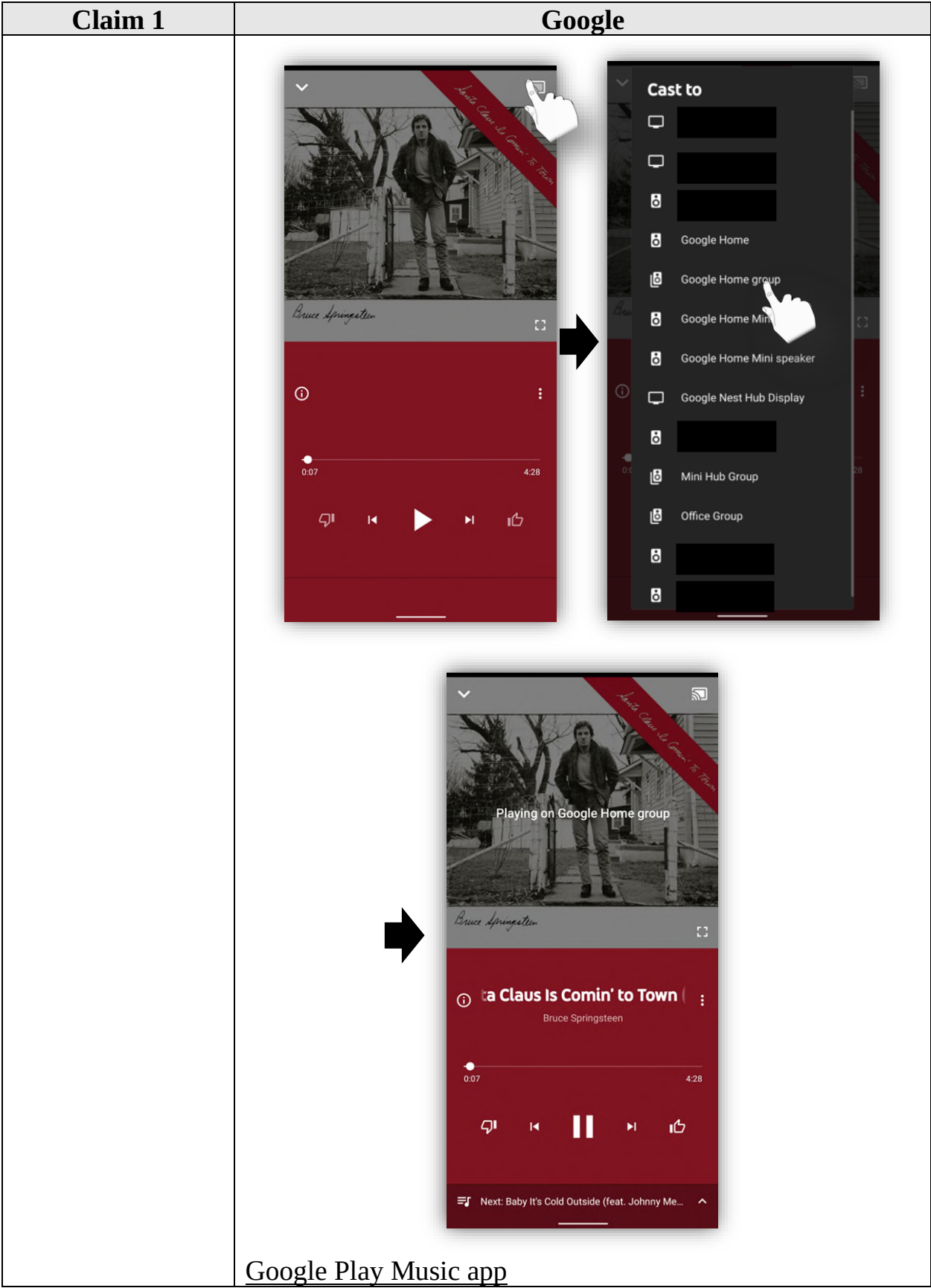
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28



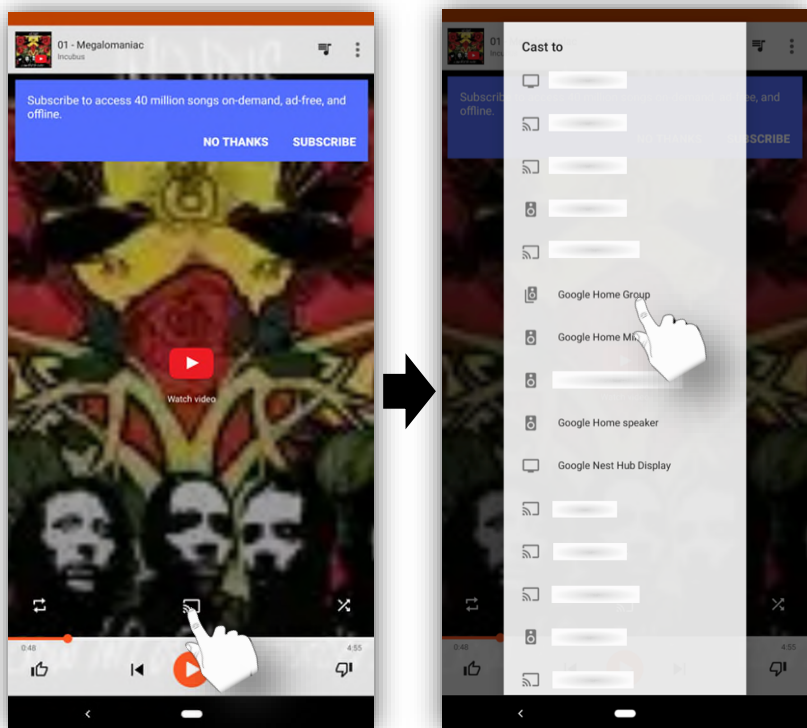
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	 The screenshot shows the Google Home app interface. At the top, there's a '+' icon and a 'Play music' button. Below that, there are sections for 'Office' (2 devices) and 'Patio' (1 device). The 'Office' section shows a 'Google Home Mini' and a 'Google Home speaker', both with 'Play music' buttons. The 'Patio' section shows a 'Patio' device. Below these, there's a 'Groups' section with 3 groups. The first group, 'Google Home Group', is highlighted with a red box. It shows a 'Google Home Mini' and a 'Google Home speaker' with a '2' in a circle next to it. The other two groups are 'Mini Hub Group' (2 devices) and 'Office Group' (1 device). At the bottom, there's an 'Other Cast devices' section with a 'Cast' button. The bottom navigation bar shows a home icon, a microphone icon, and a settings icon.
	YouTube Music App

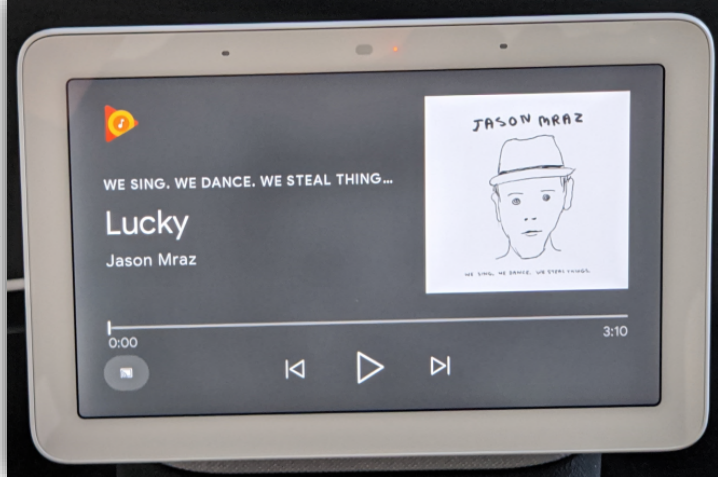
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28



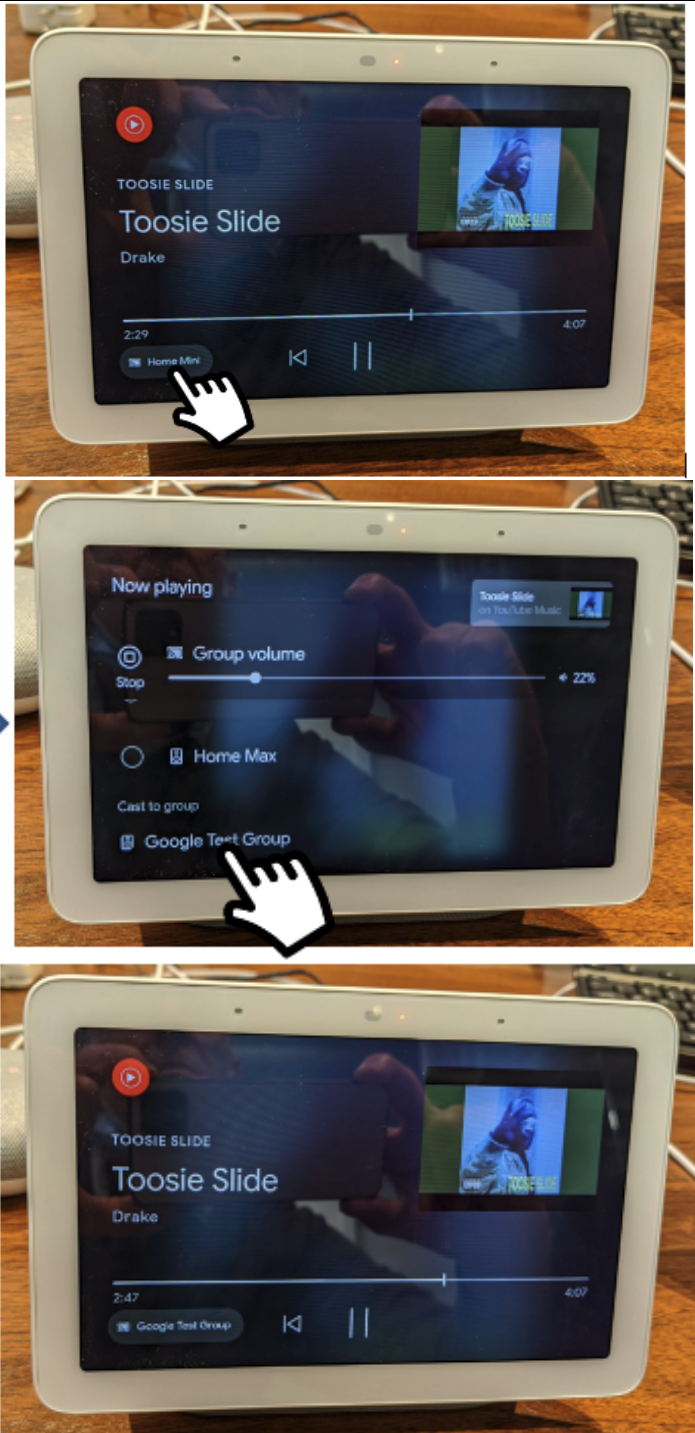
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	  <u>Hub Audio Player</u>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	
	
	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	

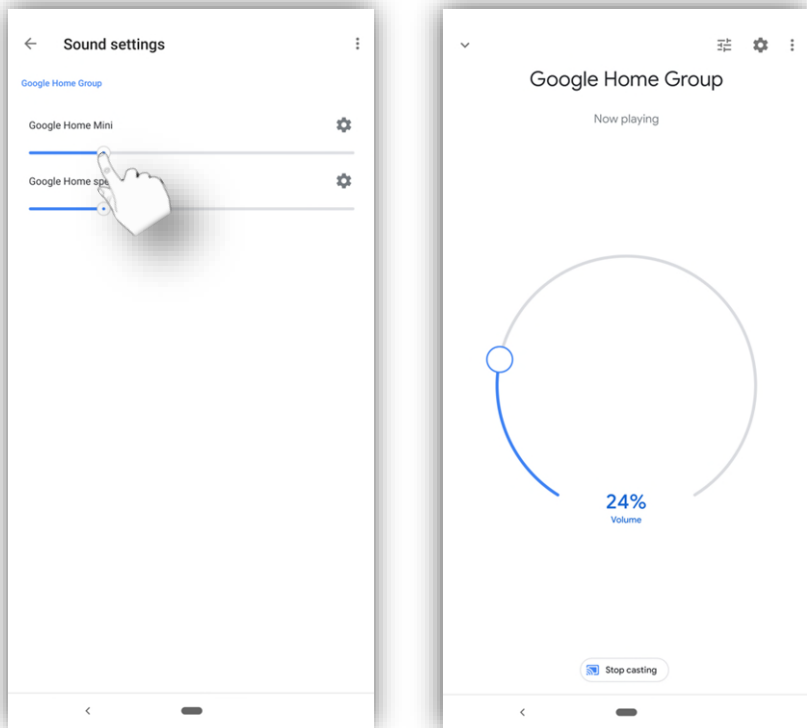
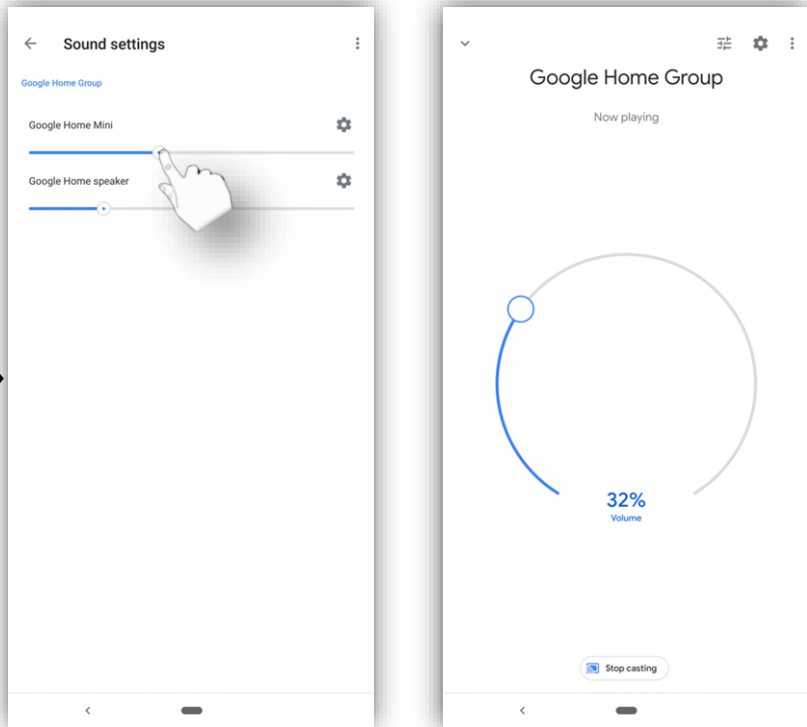
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	The image displays three sequential screenshots of a tablet screen showing the Google Home app interface. The first screenshot shows a video player for 'Toosie Slide' by Drake with a hand cursor over the 'Home Mini' button. The second screenshot shows the 'Now playing' screen with a hand cursor over the 'Home Mini' volume slider. The third screenshot shows the same screen with a hand cursor over the 'Home Mini' volume slider, which is now at 41%.

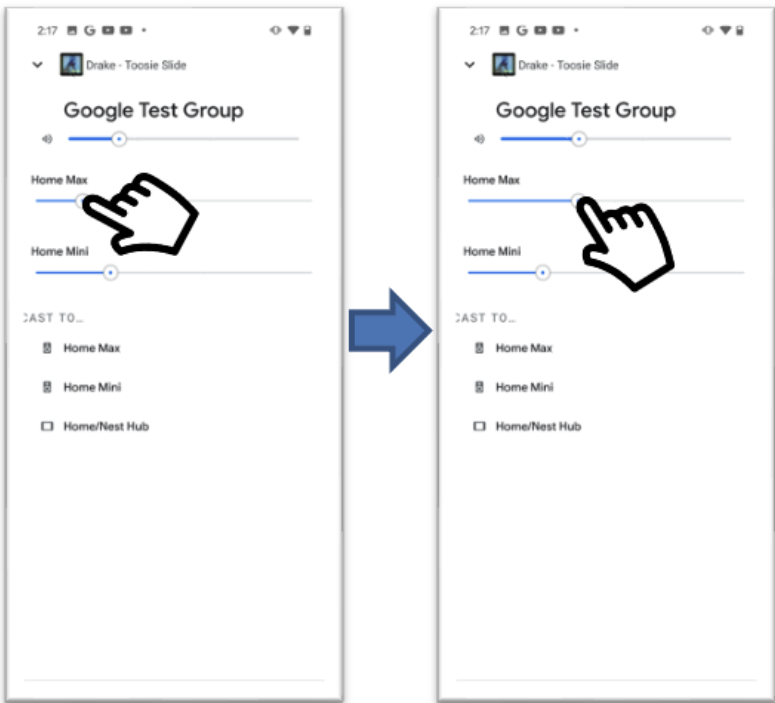
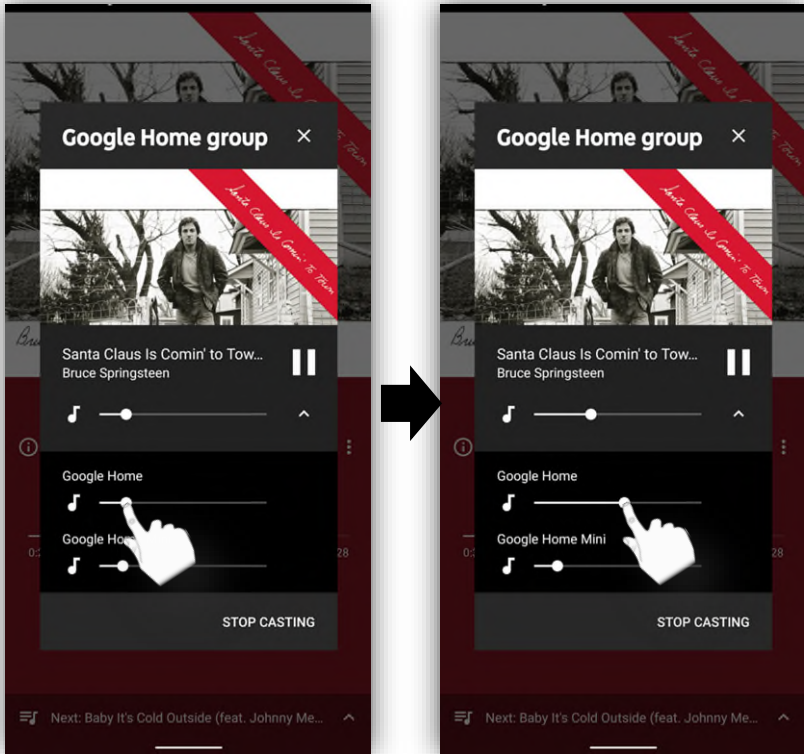
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

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. <u>Google Home app</u>

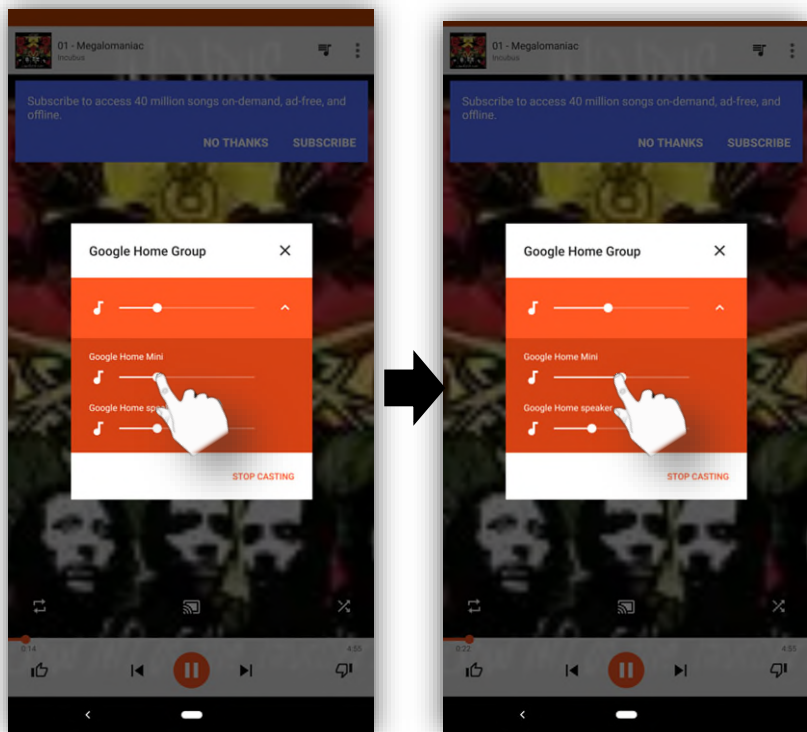
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	
	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	
	<u>YouTube Music App</u> 
	<u>Google Play Music app</u>

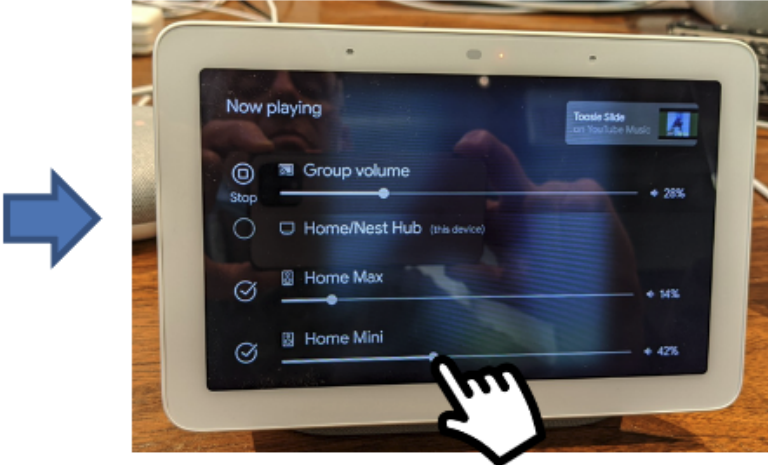
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	 <u>Hub Audio Player</u>

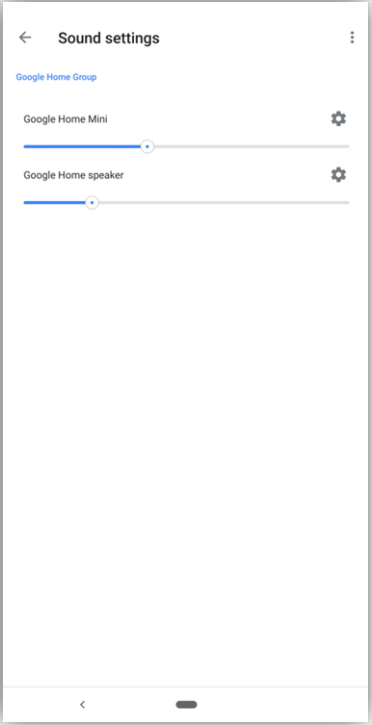
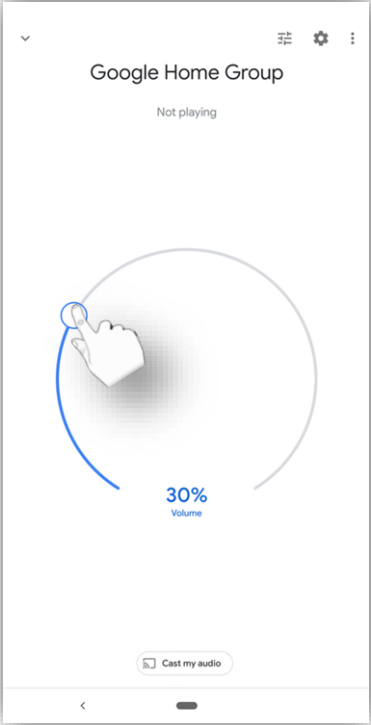
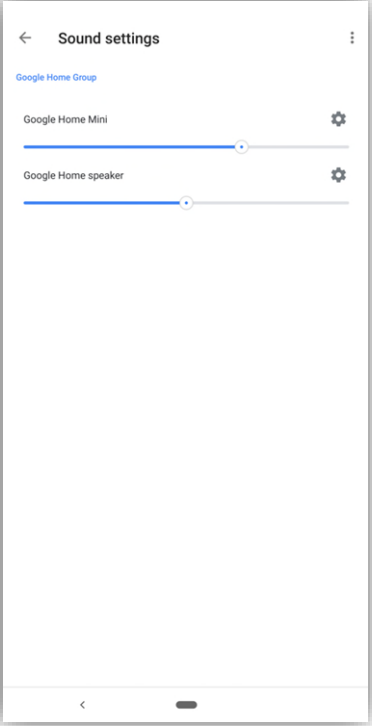
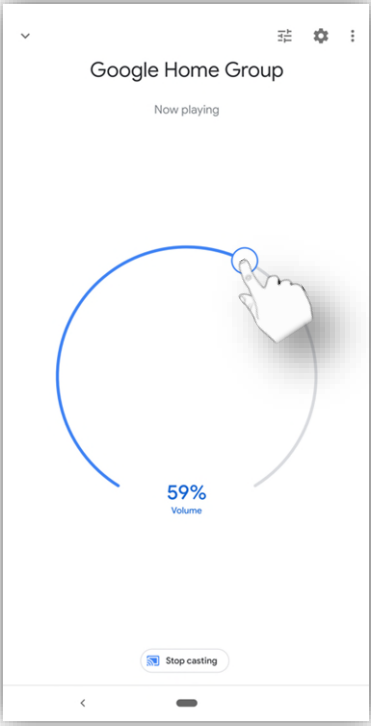
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	

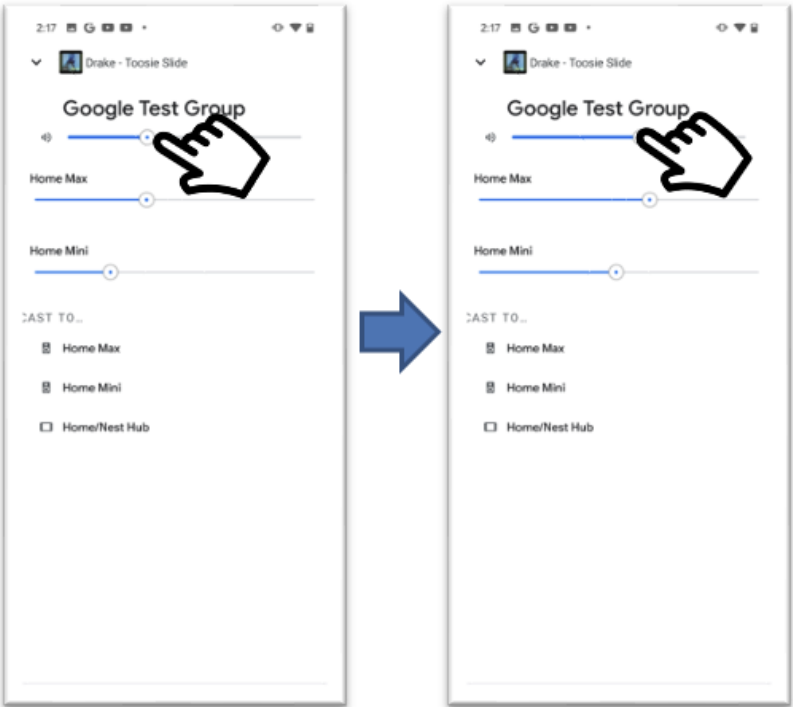
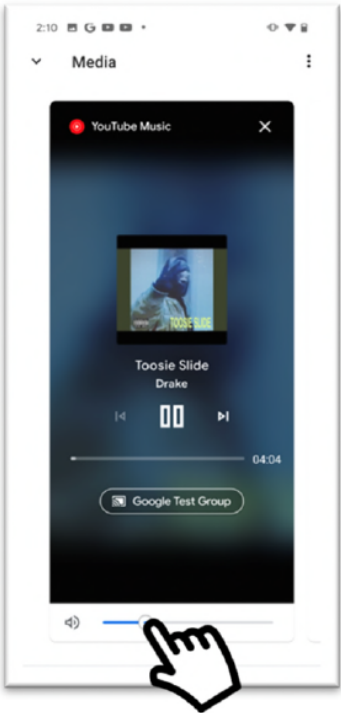
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

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. <u>Google Home app</u>

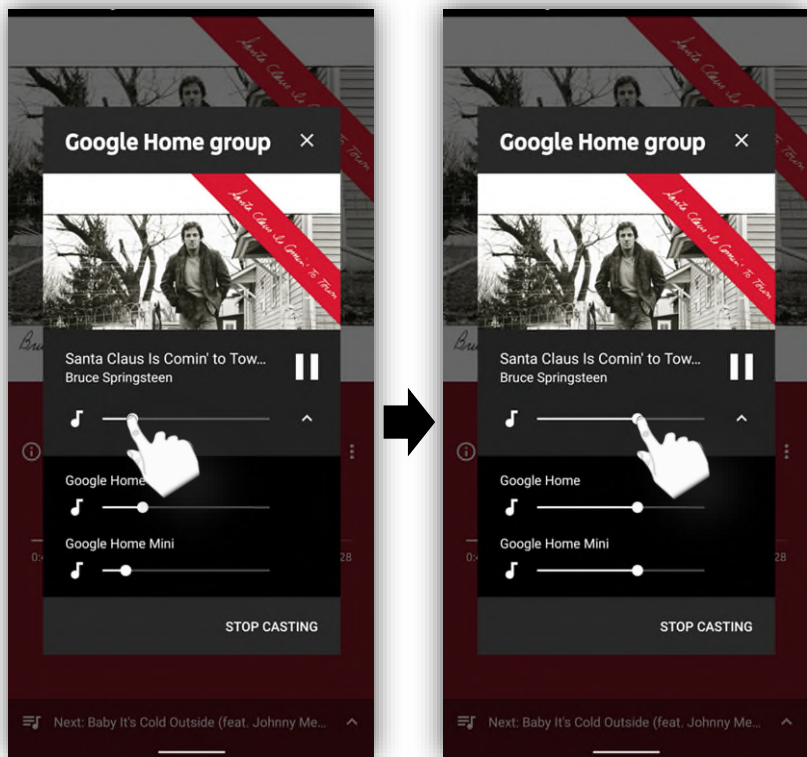
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	  

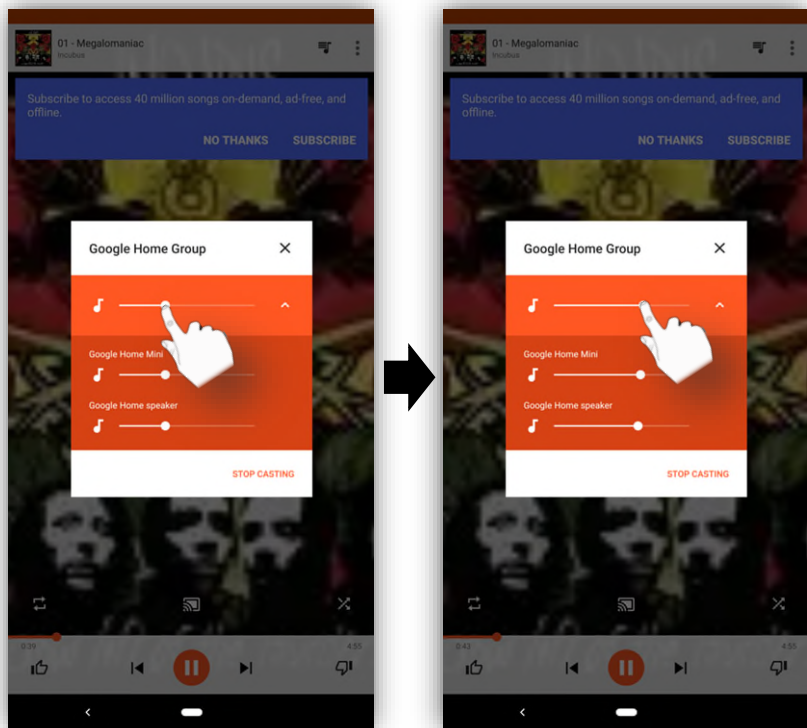
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	 
	<u>YouTube Music app</u>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	 <u>Google Play Music app</u>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	 Hub Audio Player

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	

Claim 1	Google
	<i>See also, e.g.,</i> 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.

238. 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 this action (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

1 while knowing that installation and/or use of the Google Apps would infringe one
2 or more claims of the ‘949 Patent and that Google’s customers then directly
3 infringed one or more claims of the ‘949 Patent by installing and/or using the
4 Google Apps in accordance with Google’s product literature. *See, e.g., id.*

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

10 240. Additionally and/or alternatively, Google has indirectly infringed and
11 continued to indirectly infringe up to the date of expiration of the ‘949 Patent one
12 or more of the claims of the ‘949 Patent, in violation of 35 U.S.C. § 271(c), by
13 offering to sell or selling within the United States, and/or importing into the
14 United States, components in connection with the Google Wireless Audio System
15 that contributed to the direct infringement of the ‘949 Patent by users of the
16 Google Wireless Audio System. In particular, (a) Google had actual knowledge
17 of the ‘949 Patent or was willfully blind to its existence prior to (at least as early
18 as September 2016), and no later than, the filing of this action (*see* ¶¶ 38-71
19 above), (b) Google offered for sale, sold, and/or imported, in connection with the
20 Google Wireless Audio System, one or more material components of the
21 invention of the ‘949 Patent that are not staple articles of commerce suitable for
22 substantial noninfringing use, (c) Google knew (or should have known) that such
23 component(s) were especially made or especially adapted for use in an
24 infringement of the ‘949 Patent, and (d) users of devices that comprise such
25 material component(s) directly infringed one or more claims of the ‘949 Patent.
26 For instance, at a minimum, Google offered for sale, sold, and/or imported the
27 Google Apps for installation on devices (*e.g.,* smartphones, tablets, and
28 computers) that meet one or more claims of the ‘949 Patent. *See, e.g., Exs. 29,*

1 34-39, 55. The Google Apps are material components of the devices that meet the
2 one or more claims of the ‘949 Patent. Further, Google especially made and/or
3 adapted the Google Apps for use in devices that meet the one or more claims of
4 the ‘949 Patent, and the Google Apps are not a staple article of commerce suitable
5 for substantial noninfringing use. Google’s customers then directly infringed the
6 one or more claims of the ‘949 Patent by installing and/or using the Google Apps
7 on the customers’ devices.

8 241. As another example, Google offered for sale, sold, and/or imported
9 software updates for Hub Audio Players that meet one or more claims of the ‘949
10 Patent. *See, e.g.*, Exs. 29, 84, 85. These software updates are material
11 components of the Hub Audio Players that meet the one or more claims of the
12 ‘949 Patent. Further, Google especially made and/or adapted these software
13 updates for use in the Hub Audio Players that meet the one or more claims of the
14 ‘949 Patent, and these software updates are not staple articles of commerce
15 suitable for substantial noninfringing use. Google’s customers then directly
16 infringed the one or more claims of the ‘949 Patent by installing and using
17 software updates on the Hub Audio Players.

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

25 243. Additional allegations regarding Google’s pre-suit knowledge of the
26 ‘949 Patent and willful infringement will likely have evidentiary support after a
27 reasonable opportunity for discovery.
28

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

3 245. Sonos is entitled to recover from Google all damages that Sonos has
4 sustained as a result of Google’s infringement of the ‘949 Patent, including,
5 without limitation, a reasonable royalty and lost profits.

6 246. Google’s infringement of the ‘949 Patent was willful and deliberate,
7 entitling Sonos to enhanced damages.

8 247. Google’s infringement of the ‘949 Patent was exceptional and
9 entitles Sonos to attorneys’ fees and costs incurred in prosecuting this action
10 under 35 U.S.C. § 285.

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

12 248. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
13 126-42 of this First Amended Complaint as if fully set forth herein.

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

21 250. As just one non-limiting example, set forth below is an exemplary
22 infringement claim chart for claim 17 of the ‘258 Patent in connection with the
23 Google Wireless Audio System. This claim chart is based on publicly available
24 information. Sonos reserves the right to modify this claim chart, including, for
25 example, on the basis of information about the Google Wireless Audio System
26 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 (<i>e.g.</i> , 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. <i>See, e.g.</i> , 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. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
one or more processors; and	Each of the foregoing Google Audio Players includes one or more processors. <i>See, e.g.</i> , 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. <i>See, e.g.</i> , Exs. 68, 85, 95-98, 111-113.
receive control information from any one of a plurality of	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

1	Claim 17	Google
2	controllers over the	that Google Audio Player to receive control
3	LAN via the network	information from any one of a plurality of Chromecast-
4	interface, wherein the	enabled computing devices over the LAN via the
5	received control	network interface, where the received control
6	information comprises	information comprises a direction for the first Google
7	a direction for the first	Audio Player to enter into a synchrony group with at
8	zone player to enter	least a second Google Audio Player.
9	into a synchrony group	For instance, each of the foregoing Google Audio
10	with at least a second	Players is programmed with the capability to receive
11	zone player;	over a local Wi-Fi network (which is a LAN), from any
12		of a plurality of Chromecast-enabled computing
13		devices, a direction to enter into a group of two or more
14		Google Audio Players that are configured to play back
15		audio in synchrony with one another. <i>See e.g.</i> , Ex. 29
16		("Group any combination of Google Nest or Google
17	in response to the	Home speakers and displays, Chromecast devices, and
18	direction, enter into the	speakers with Chromecast built-in together for
19	synchrony group with	synchronous music throughout the home. Your favorite
20	the second zone player,	music and audio from Chromecast-enabled apps are
21		instantly available to stream."); Exs. 30, 69, 94, 99,
22		104, 106.
23		Each of the foregoing Google Audio Players comprises
24		program instructions that, when executed by a first
25		Google Audio Player's one or more processors, cause
26		that Google Audio Player to, in response to the
27		direction, enter into the synchrony group with the
28		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. <i>See e.g.</i> , 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
		(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.

1	Claim 17	Google
2	wherein in the	Once grouped, the first and second Google Audio
3	synchrony group, the	Players are configured to play back audio in synchrony
4	first and second zone	based at least in part on (i) audio content, (ii) playback
5	players are configured	timing information associated with the audio content
6	to playback audio in	that is generated by the first Google Audio Player that
7	synchrony based at	is designated to serve as the “master” of the group, and
8	least in part on (i)	(iii) clock time information for the first Google Audio
9	audio content, (ii)	Player, where the generated playback timing
10	playback timing	information and the clock time information are
11	information associated	transmitted from the first Google Audio Player to the
12	with the audio content,	second Google Audio Player that is designated to serve
13	wherein the playback	as a “slave” of the group, and where the Google Audio
14	timing information is	Players in the group remain independently clocked
15	generated by one of the	while playing back audio in synchrony.
16	first or second zone	
17	players, and (iii) clock	For instance, Google states that once its Google Audio
18	time information for	Players have been grouped, those audio players are
19	the one of the first or	configured to play audio in synchrony. <i>See, e.g.,</i> Ex.
20	second zone players,	29 (“Group any combination of Google Nest or Google
21	and wherein the	Home speakers and displays, Chromecast devices, and
22	generated playback	speakers with Chromecast built-in together for
23	timing information and	synchronous music throughout the home.”); <i>see also,</i>
24	the clock time	<i>e.g.,</i> Exs. 69, 99, 106.
25	information are	
26	transmitted from the	Further, while in a group, a first Google Audio Player
27	one of the first or	that is designated to serve as the “master”/“leader” of
28	second zone players to	the group receives audio content from an audio source
	the other of the first or	(<i>e.g.,</i> an Internet-based audio source), and then the first
	second zone players,	Google Audio Player and a second Google Audio
	wherein the first and	Player that is designated to serve as a “slave” of the
	second zone players	group are each configured play back audio in
	remain independently	synchrony based on the audio content, playback timing
	clocked while playing	information associated with the audio content and
	back audio in	generated by the first Google Audio Player, and clock
	synchrony; and	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 –
		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

Claim 17	Google
	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 (<i>e.g.</i>, 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. <i>See also, e.g.</i>, Ex. 100 ("GCKMultizoneStatus Class" providing "[t]he status of a multizone group" including "[t]he member devices of the multizone group.").

251. 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 this action (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of

1 the Google Wireless Audio System to directly infringe one or more claims of the
2 ‘258 Patent by promoting, advertising, and instructing customers and potential
3 customers about the Google Wireless Audio System and uses of the system,
4 including infringing uses (see Exs. 20, 29, 60, 61), (c) Google knows (or should
5 know) that its actions will induce users of the Google Wireless Audio System to
6 directly infringe one or more claims the ‘258 Patent, and (d) users of the Google
7 Wireless Audio System directly infringe one or more claims of the ‘258 Patent.
8 For instance, at a minimum, Google has supplied and continues to supply Google
9 Audio Players to customers while knowing that use of these products will infringe
10 one or more claims of the ‘258 Patent and that Google’s customers then directly
11 infringe one or more claims of the ‘258 Patent by using these Google Audio
12 Players in accordance with Google’s product literature. *See, e.g., id.*

13 252. Additionally and/or alternatively, Google has indirectly infringed and
14 continued to indirectly infringe up to the date of expiration of the ‘258 Patent one
15 or more of the claims of the ‘258 Patent, in violation of 35 U.S.C. § 271(c), by
16 offering to sell or selling within the United States, and/or importing into the
17 United States, components in connection with the Google Wireless Audio System
18 that contribute to the direct infringement of the ‘258 Patent by users of the Google
19 Wireless Audio System. In particular, (a) Google had actual knowledge of the
20 ‘258 Patent or was willfully blind to its existence prior to (at least as early as
21 October 2016), and no later than, the filing of this action (see ¶¶ 38-71 above), (b)
22 Google offers for sale, sells, and/or imports, in connection with the Google
23 Wireless Audio System, one or more material components of the invention of the
24 ‘258 Patent that are not staple articles of commerce suitable for substantial
25 noninfringing use, (c) Google knows (or should know) that such component(s)
26 were especially made or especially adapted for use in an infringement of the ‘258
27 Patent, and (d) users of devices that comprise such material component(s) directly
28 infringe one or more claims of the ‘258 Patent. For instance, at a minimum,

1 Google offers for sale, sells, and/or imports software updates for Google Audio
2 Players that meet one or more claims of the ‘258 Patent. *See, e.g.*, Ex. 20, 29, 60,
3 61, 85. These software updates are material components of the Google Audio
4 Players that meet the one or more claims of the ‘258 Patent. Further, Google
5 especially made and/or adapted these software updates for use in the Google
6 Audio Players that meet the one or more claims of the ‘258 Patent, and these
7 software updates are not staple articles of commerce suitable for substantial
8 noninfringing use. Google’s customers then directly infringe the one or more
9 claims of the ‘258 Patent by installing and using software updates on the Google
10 Audio Players.

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

18 254. Additional allegations regarding Google’s pre-suit knowledge of the
19 ‘258 Patent and willful infringement will likely have evidentiary support after a
20 reasonable opportunity for discovery.

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

23 256. Sonos is entitled to recover from Google all damages that Sonos has
24 sustained as a result of Google’s infringement of the ‘258 Patent, including,
25 without limitation, a reasonable royalty and lost profits.

26 257. Google’s infringement of the ‘258 Patent was and continued to be
27 willful and deliberate, entitling Sonos to enhanced damages.
28

258. 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. 9,219,959⁸

259. Sonos incorporates by reference and re-alleges paragraphs 47-55 and 89-106 of this 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 continue to directly infringe one or more of the claims of the ‘959 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Google Wireless Audio System (*e.g.*, the Google Home Max) 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 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 output audio in a multi-channel listening environment, the	At least each Google Home Max comprises a “playback device configured to output audio 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

⁸ Other than amending the Count number (i.e., from “Count III” to “Count IV” Sonos has not amended this Count because Sonos understands the case is stayed as to the non-expired originally asserted patents (i.e., the ‘959 Patent and the ‘896 Patent). Sonos reserves the right to amend this Count when the stay is lifted as to these patents.

Claim 10	Google
playback device comprising:	a “Chromecast-enabled computing device”) comprises a “controller,” as recited in claim 10.
a network interface configured to receive audio data over a network;	The foregoing Google Audio Player includes a network interface configured to receive audio data over a network, such as a Wi-Fi interface. <i>See, e.g.</i> , Ex. 96 (“802.11b/g/n/ac (2.4GHz/5Ghz) Wi-Fi for high-performance streaming”); Ex. 68 (same).
a plurality of speaker drivers configured to output audio based on the audio data;	The foregoing Google Audio Player includes a plurality of speaker drivers configured to output audio based on the audio data. <i>See, e.g.</i> , 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).
one or more processors; and	The foregoing Google Audio Player includes one or more processors. <i>See, e.g.</i> , Ex. 68 (“Processor[:] 1.5GHz 64-bit quad-core ARM® Cortex™ A53”); Ex. 96 (same).
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	The foregoing Google Audio Player includes tangible, non-transitory, computer-readable memory comprising executable program instructions that enable the Google Audio Player to perform the functions identified below. <i>See, e.g.</i> , Exs. 68, 96.
(i) receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to pair with one or more playback devices,	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 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. For instance, each Google Home Max is programmed with the capability to receive, from a Chromecast-enabled computing device over a Wi-Fi network that the Google Home Max is connected to, an instruction to begin operating as part of a “speaker pair” configuration for

1	Claim 10	Google
2		“stereo sound” (also referred to by Google as a “stereo
3		pairing”) with another Google Home Max, which is a
4		configuration involving two or more Google Audio
5		Players having different playback roles. <i>See, e.g.</i> , Ex. 69
6		(“Pair Google Home Max speakers[:] You can pair two
7		Google Home Max speakers (devices) for stereo sound
8		and an immersive experience for music and casting. . . .
9		Step 1. Place speakers in the best position in your room . .
10		. Step 2. Set up both Google Home Max speakers . . . Step
11		3. Pair the speakers . . . Step 4. Control the speaker pair.”);
12		Ex. 68 (“Wireless stereo pairing”). In a “speaker pair”
13		configuration, one Google Home Max has the role of
14		playing back the left audio channel, and the other Google
15		Home Max has the role of playing back the right audio
16		channel. <i>See, e.g.</i> , Ex. 69 (“Tap Left or Right to match
17		the location of the blinking speaker . . .”) (emphasis in
18		original).
19		For example, at the time that a user inputs a request to
20		create a given “speaker pair” via a Chromecast-enabled
21		computing device, the Chromecast-enabled computing
22		device transmits control packets to at least a first Google
23		Home Max in the given “speaker pair.” On information
24		and belief, these control packets include an instruction for
25		the first Google Home Max to begin operating as part of
26		the given “speaker pair” with at least a second Google
27		Home Max. <i>See, e.g.</i> , Ex. 69 (“When two speakers are
28		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).
	(ii) process the	The foregoing Google Audio Player comprises program
	audio data before	instructions that, when executed by the Google Audio
	the playback device	Player’s one or more processors, cause the Google Audio
	outputs audio from	Player to process the audio data before the Google Audio
	the plurality of	Player outputs audio from the plurality of speaker drivers.
	speaker drivers,	
		For instance, each Google Home Max is programmed
		with the capability to perform various types of audio

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 10	Google
	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. <i>See, e.g.</i> , 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[.]	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 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 Google Home Max 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. <i>See, e.g.</i>, Ex. 69 (“Pair the speakers . . . Unpair speakers”); Ex. 68 (“Wireless stereo pairing”). Further, each Google Home Max is programmed with the capability to determine its type of pairing at various times, including but not limited to when the Google Home Max receives an instruction to begin or stop operating as part of a “speaker pair” with another Google Home Max, when the Google Home Max is performing certain functions in accordance with its current “pairing type,” and/or when the Google Home Max powers up. <i>See, e.g., id.</i>

1	Claim 10	Google
2	(iv) configure the	The foregoing Google Audio Player comprises program
3	playback device to	instructions that, when executed by the Google Audio
4	perform a first	Player's one or more processors, cause the Google Audio
5	equalization of the	Player to configure itself to (i) perform a first equalization
6	audio data before	of the audio data before outputting audio based on the
7	outputting audio	audio data from the plurality of speaker drivers when the
8	based on the audio	type of pairing is determined to comprise the first type of
9	data from the	pairing and (ii) perform a second equalization of the audio
10	plurality of speaker	data before outputting audio based on the audio data from
11	drivers when the	the plurality of speaker drivers when the type of pairing is
12	type of pairing is	determined to comprise the second type of pairing.
13	determined to	
14	comprise the first	For instance, each Google Home Max is programmed with
15	type of pairing, and	the capability to change its equalization (including but not
16	(v) configure the	limited to its channel and/or frequency output) when its
17	playback device to	type of pairing changes from one of the aforementioned
18	perform a second	types of pairing to another of the aforementioned types of
19	equalization of the	pairing. <i>See, e.g.</i> , Ex. 69 ("Pair the speakers . . . Unpair
20	audio data before	speakers").
21	outputting audio	
22	based on the audio	As one example to illustrate, as discussed above, each
23	data from the	Google Home Max is programmed with the capability to
24	plurality of speaker	operate in accordance with either a "no pairing" type of
25	drivers when the	pairing or a "speaker pair" type of pairing. When
26	type of pairing is	operating in accordance with a "no pairing" type of
27	determined to	pairing, the Google Home Max is configured to perform a
28	comprise the second	first equalization of audio data that is specific to the "no
	type of pairing.	pairing" type of pairing, which involves using one or more
		parameters that affect at least the channel output of one or
		more of the Google Home Max's speaker drivers such that
		both the left channel and the right channel of audio
		content are output via the Google Home Max's speaker
		drivers (perhaps along with using a first set of gain,
		frequency, phase, and/or time delay parameters that are
		specific to a "no pairing" type of pairing). <i>See, e.g.</i> , 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

Claim 10	Google
	3. Pair the speakers . . . Step 4. Control the speaker pair.”). On the other hand, when operating in accordance with a “speaker pair” type of pairing, the Google Home Max is configured to perform a second equalization of audio data that is specific to the “speaker pair” type of pairing, which involves using one or more parameters that affect at least the channel output of one or more of the Google Home Max’s speaker drivers such that only a given one of the left or right channel of audio content is output via the Google Home Max’s speaker drivers (perhaps along with using a second set of gain, frequency, phase, and/or time delay parameters that are specific to a “stereo pairing” type of pairing). <i>See, e.g., id.</i>

262. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the ‘959 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 ‘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 this action (see ¶¶ 35-38 above), (b) Google intentionally causes, urges, or encourages 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), (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 ‘959 Patent, and (d) users of the Google Wireless Audio System directly infringe one or more claims of the ‘959 Patent. For instance, at a minimum, Google has supplied and continues to supply the Google Home Max to customers while knowing that use of this product will infringe one or more claims of the ‘959 Patent and that Google’s customers then directly infringe one or more claims of the ‘959 Patent

1 by using the Google Home Max in accordance with Google's product literature.
2 *See, e.g., id.*

3 263. Additionally and/or alternatively, Google has indirectly infringed and
4 continues to indirectly infringe one or more of the claims of the '959 Patent, in
5 violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United
6 States, and/or importing into the United States, components in connection with the
7 Google Wireless Audio System that contribute to the direct infringement of the
8 '959 Patent by users of the Google Wireless Audio System. In particular, (a)
9 Google had actual knowledge of the '959 Patent or was willfully blind to its
10 existence prior to (at least as early as October 2016), and no later than, the filing
11 of this action (*see* ¶¶ 35-38 above), (b) Google offers for sale, sells, and/or
12 imports, in connection with the Google Wireless Audio System, one or more
13 material components of the invention of the '959 Patent that are not staple articles
14 of commerce suitable for substantial noninfringing use, (c) Google knows (or
15 should know) that such component(s) were especially made or especially adapted
16 for use in an infringement of the '959 Patent, and (d) users of devices that
17 comprise such material component(s) directly infringe one or more claims of the
18 '959 Patent. For instance, at a minimum, Google offers for sale, sells, and/or
19 imports software updates for the Google Home Max that meets one or more
20 claims of the '959 Patent. *See, e.g.,* Exs. 67-70, 85. These software updates are
21 material components of the Google Home Max that meets the one or more claims
22 of the '959 Patent. Further, Google especially made and/or adapted these
23 software updates for use in the Google Home Max that meets the one or more
24 claims of the '959 Patent, and these software updates are not staple articles of
25 commerce suitable for substantial noninfringing use. Google's customers then
26 directly infringe the one or more claims of the '959 Patent by installing and using
27 software updates on the Google Home Max.

1 264. Google’s infringement of the ‘959 Patent is also willful because
2 Google (a) had actual knowledge of the ‘959 Patent or was willfully blind to its
3 existence prior to (at least as early as October 2016), and no later than, the filing
4 of this action (see ¶¶ 35-38 above), (b) engaged in the aforementioned activity
5 despite an objectively high likelihood that Google’s actions constituted
6 infringement of the ‘959 Patent, and (c) this objectively-defined risk was either
7 known or so obvious that it should have been known to Google.

8 265. Additional allegations regarding Google’s pre-suit knowledge of the
9 ‘959 Patent and willful infringement will likely have evidentiary support after a
10 reasonable opportunity for discovery.

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

13 267. Sonos is entitled to recover from Google all damages that Sonos has
14 sustained as a result of Google’s infringement of the ‘959 Patent, including,
15 without limitation, a reasonable royalty and lost profits.

16 268. Google’s infringement of the ‘959 Patent was and continues to be
17 willful and deliberate, entitling Sonos to enhanced damages.

18 269. Google’s infringement of the ‘959 Patent is exceptional and entitles
19 Sonos to attorneys’ fees and costs incurred in prosecuting this action under 35
20 U.S.C. § 285.

21 270. Google’s infringement of the ‘959 Patent has caused irreparable
22 harm (including the loss of market share) to Sonos and will continue to do so
23 unless enjoined by this Court.

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

25 271. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
26 162-73 of this First Amended Complaint as if fully set forth herein.

27 272. Google and/or users of the Google Wireless Audio System have
28 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.

273. 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 (<i>e.g.</i> , 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. <i>See, e.g.</i> , 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. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
tangible, non-transitory computer-readable media having	Each of the foregoing Google Audio Players includes tangible, non-transitory computer-readable media having executable instructions encoded therein that

1	Claim 7	Google
2	instructions encoded	enable a Google Audio Player to perform the functions
3	therein, wherein the	identified below. <i>See, e.g.</i> , Exs. 68, 85, 95-98, 111-113.
4	instructions, when	
5	executed by the first	
6	zone player, cause the	
7	first zone player to	
8	perform functions	
9	comprising:	
10	performing a master	Each of the foregoing Google Audio Players comprises
11	device role for a	program instructions that, when executed by a first
12	synchrony group	Google Audio Player, cause the first Google Audio
13	comprising the first	Player to perform a master device role for a synchrony
14	zone player and a	group comprising the first Google Audio Player and a
15	second zone player,	second Google Audio Player, where in the master
16	wherein in the master	device role, the first Google Audio Player is configured
17	device role, the first	to control synchronous playback of audio information
18	zone player is	by both the first Google Audio Player and the second
19	configured to control	Google Audio Player in response to playback
20	synchronous playback	commands received from a Chromecast-enabled
21	of audio information	computing device via a network interface of the first
22	by both the first zone	Google Audio Player.
23	player and the second	
24	zone player in response	For instance, each of the foregoing Google Audio
25	to playback commands	Players is programmed with the capability to enter into
26	received from a	a group of two or more Google Audio Players that are
27	controller device via a	configured to play back audio in synchrony. <i>See, e.g.</i> ,
28	network interface of	Ex. 29 (“Group any combination of Google Nest or
	the first zone player;	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

1	Claim 7	Google
2		(sometimes referred to by Google as a “follower” of the
3		group). <i>See, e.g.</i> , Ex. 122, 1277:10-13, 1278:1-6.
4		Further, each of the foregoing Google Audio Players is
5		programmed such that, while operating as a “master” of
6		a group, the Google Audio Player is configured to
7		control synchronous audio playback by both the
8		“master” Google Audio Player and each “slave”
9		Google Audio Player in the group in response to
10		playback commands received from a Chromecast-
11		enabled computing device on the same LAN as the
12		Google Audio Player. <i>See, e.g.</i> , Ex. 122, 1300:6-15
13		(“[S]o in order to play media onto a group, one of the
14		devices in the group has to be the leader. That will be
15		the device that actually will launch the application that
16		you would like to listen to, and that is what downloads
17		the media from the internet and then distributes the
18		audio to the rest of the devices.”); <i>id.</i> , 1259:20-1260:5,
19		1268:23-1269:8, 1315:5-10.
20	while performing the	Each of the foregoing Google Audio Players comprises
21	master device role,	program instructions that, when executed by a first
22	evaluating one or more	Google Audio Player, cause the first Google Audio
23	operational	Player to, while performing a master device role,
24	performance metrics of	evaluate one or more operational performance metrics
25	the one or more	of the one or more processors or the at least one
26	processors or the at	network interface indicating potential degradation in
27	least one network	performance of synchronous playback of audio
28	interface indicating	information by both the first and second Google Audio
	potential degradation	Players, and based on the evaluation, determine that the
	in performance of	second Google Audio Player should perform the master
	synchronous playback	device role for the synchrony group instead of the first
	of audio information	Google Audio Player.
	by both the first and	
	second zone player,	For instance, each of the foregoing Google Audio
	and based on the	Players is programmed such that, while operating as a
	evaluation,	“master”/“leader” of a group, the Google Audio Player
	determining that the	is configured to (i) evaluate one or more metrics related
	second zone player	to the performance of the synchronous audio playback
	should perform the	by the Google Audio Players in the group, including
		but not limited to one or more metrics related to the

Claim 7	Google
master device role for the synchrony group;	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, determine that a different Google Audio Player in the group should take over as the “master” of the group. <i>See also</i> 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. <i>See</i> 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.” <i>Id.</i>, 1253:19-23; <i>see also id.</i>, 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

1	Claim 7	Google
2		Audio Player initiates migrating the “master” role to
3		the one “slave” Google Audio Player.
4		Public documentation from Google evidences this
5		functionality. For example, one of Google’s patent
6		publications related to the Google Audio Players
7		explains that, when the “leader” role is to be migrated,
8		the current “leader” performs a “deregistration” process
9		so that another player can take over the “leader” role.
10		<i>See, e.g.</i> , US20180262792, ¶52; <i>see also id.</i> , ¶51, 64.
11		As another example, a technical document (TX6454)
12		Google published during a jury trial (Ex. 122, 1238:10-
13	after migration of the	24) states “[i]f a new, better group leader comes online,
14	master device role	the old group leader should send a goodbye packet to
15	from the first zone	indicate to the SDK that it is no longer the leader.” Ex.
16	player to the second	127, GOOG-SONOSWDTX-00048968.
17	zone player, ceasing to	
18	perform the master	Each of the foregoing Google Audio Players comprises
19	device role for the	program instructions that, when executed by a first
20	synchrony group, and	Google Audio Player, cause the first Google Audio
21	playing back audio	Player to, after migration of the master device role from
22	information in	the first Google Audio Player to a second Google
23	synchrony with the	Audio Player, cease to perform the master device role
24	second zone player	for the synchrony group and play back audio
25	while the second zone	information in synchrony with the second Google
26	player is performing	Audio Player while the second Google Audio Player is
27	the master device role	performing the master device role for the synchrony
28	for the synchrony	group.
	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

Claim 7	Google
	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 operate as a “follower” of the group. <i>See, e.g.</i> , Ex. 122, 1247:13-1251:24.

274. 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 this 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.*

275. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the ‘715 Patent, in

1 violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United
2 States, and/or importing into the United States, components in connection with the
3 Google Wireless Audio System that contribute to the direct infringement of the
4 ‘715 Patent by users of the Google Wireless Audio System. In particular, (a)
5 Google had actual knowledge of the ‘715 Patent or was willfully blind to its
6 existence prior to (at least as early as February 2019), and no later than, the filing
7 of this First Amended Complaint (see ¶¶ 38-71 above), (b) Google offers for sale,
8 sells, and/or imports, in connection with the Google Wireless Audio System, one
9 or more material components of the invention of the ‘715 Patent that are not
10 staple articles of commerce suitable for substantial noninfringing use, (c) Google
11 knows (or should know) that such component(s) were especially made or
12 especially adapted for use in an infringement of the ‘715 Patent, and (d) users of
13 devices that comprise such material component(s) directly infringe one or more
14 claims of the ‘715 Patent. For instance, at a minimum, Google offers for sale,
15 sells, and/or imports software updates for Google Audio Players that meet one or
16 more claims of the ‘715 Patent. *See, e.g.*, Ex. 20, 29, 60, 61, 85. These software
17 updates are material components of the Google Audio Players that meet the one or
18 more claims of the ‘715 Patent. Further, Google especially made and/or adapted
19 these software updates for use in the Google Audio Players that meet the one or
20 more claims of the ‘715 Patent, and these software updates are not staple articles
21 of commerce suitable for substantial noninfringing use. Google’s customers then
22 directly infringe the one or more claims of the ‘715 Patent by installing and using
23 software updates on the Google Audio Players.

24 276. Google’s infringement of the ‘715 Patent is also willful because
25 Google (a) had actual knowledge of the ‘715 Patent or was willfully blind to its
26 existence prior to (at least as early as February 2019), and no later than, the filing
27 of this First Amended Complaint (see ¶¶ 38-71 above), (b) engaged in the
28 aforementioned activity despite an objectively high likelihood that Google’s

1 actions constituted infringement of the ‘715 Patent, and (c) this
2 objectively-defined risk was either known or so obvious that it should have been
3 known to Google.

4 277. Additional allegations regarding Google’s pre-suit knowledge of the
5 ‘715 Patent and willful infringement will likely have evidentiary support after a
6 reasonable opportunity for discovery.

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

9 279. Sonos is entitled to recover from Google all damages that Sonos has
10 sustained as a result of Google’s infringement of the ‘715 Patent, including,
11 without limitation, a reasonable royalty and lost profits.

12 280. Google’s infringement of the ‘715 Patent was and continues to be
13 willful and deliberate, entitling Sonos to enhanced damages.

14 281. Google’s infringement of the ‘715 Patent is exceptional and entitles
15 Sonos to attorneys’ fees and costs incurred in prosecuting this action under 35
16 U.S.C. § 285.

17 282. Google’s infringement of the ‘715 Patent has caused irreparable
18 harm (including the loss of market share) to Sonos and will continue to do so
19 unless enjoined by this Court.

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

21 283. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
22 174-86 of this First Amended Complaint as if fully set forth herein.

23 284. Google and/or users of the Google Wireless Audio System have
24 directly infringed (either literally or under the doctrine of equivalents) and
25 continued to directly infringe up to the date of expiration of the ‘953 Patent one or
26 more of the claims of the ‘953 Patent, in violation of 35 U.S.C. § 271(a), by
27 making, using, offering for sale, and/or selling the Google Wireless Audio System
28

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

3 285. As just one non-limiting example, set forth below is an exemplary
4 infringement claim chart for claim 7 of the '953 Patent in connection with the
5 Google Wireless Audio System. This claim chart is based on publicly available
6 information. Sonos reserves the right to modify this claim chart, including, for
7 example, on the basis of information about the Google Wireless Audio System
8 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. <i>See, e.g.</i> , 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. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
at least one processor;	Each of the foregoing Google Audio Players includes at least one processor. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.

1	Claim 7	Google
2	a tangible, non-	Each of the foregoing Google Audio Players includes a
3	transitory computer-	tangible, non-transitory computer-readable medium
4	readable medium;	comprising executable program instructions that enable a
5	and program	Google Audio Player to perform the functions identified
6	instructions stored on	below. <i>See, e.g.</i> , Exs. 68, 85, 95-98, 111-113.
7	the tangible, non-	
8	transitory computer-	
9	readable medium that	
10	are executable by the	
11	at least one processor	
12	to cause the first zone	
13	player to perform	
14	functions comprising:	
15	receiving a request to	Each of the foregoing Google Audio Players comprises
16	enter into a	program instructions that, when executed by a first
17	synchrony group with	Google Audio Player's at least one processor, cause that
18	at least a second zone	Google Audio Player to receive a request to enter into a
19	player that is	synchrony group with at least a second Google Audio
20	communicatively	Player that is communicatively coupled with the first
21	coupled with the first	Google Audio Player over a LAN.
22	zone player over a	
23	local area network	For instance, each of the foregoing Google Audio
24	(LAN);	Players is programmed with the capability to receive
25		over a local Wi-Fi network (which is a LAN) a request to
26		enter into a group of two or more Google Audio Players
27		that are configured to play back audio in synchrony with
28		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. <i>See e.g.</i> , 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	Each of the foregoing Google Audio Players comprises
	receiving the request	program instructions that, when executed by a first

1	Claim 7	Google
2	to enter into the	Google Audio Player's at least one processor, cause that
3	synchrony group,	Google Audio Player to, in response to receiving the
4	entering into the	request to enter into the synchrony group, enter into the
5	synchrony group with	synchrony group with the second Google Audio Player,
6	the second zone	where the first Google Audio Player is selected to begin
7	player, wherein the	operating as a slave of the synchrony group and the
8	first zone player is	second Google Audio Player is selected to begin
9	selected to begin	operating as a master of the synchrony group, and where
10	operating as a slave	the clock time of the first Google Audio Player differs
11	of the synchrony	from a clock time of the second Google Audio Player.
12	group and the second	
13	zone player is	For instance, each of the foregoing Google Audio
14	selected to begin	Players is programmed such that, in response to
15	operating as a master	receiving a request to enter into a group of Google Audio
16	of the synchrony	Players, the Google Audio Player functions to enter into
17	group, and wherein	the group with the one or more other Google Audio
18	the clock time of the	Players. <i>See e.g.</i> , Exs. 29, 30, 69, 94, 99, 104, 106. In
19	first zone player	such a group, a first Google Audio Player is designated
20	differs from a clock	to operate as a "slave" of the group, and a second Google
21	time of the second	Audio Player is designated to operate as the "master" of
22	zone player;	the group (sometimes referred to by Google as the
23		"leader" of the group). Moreover, the respective clock
24		times of the first and second Google Audio Players
25		differ.
26	after beginning to	Each of the foregoing Google Audio Players comprises
27	operate as the slave	program instructions that, when executed by a first
28	of the synchrony	Google Audio Player's at least one processor, cause that
	group:	Google Audio Player to perform the following functions
		after beginning to operate as the slave of the synchrony
		group.
	receiving, from the	Each of the foregoing Google Audio Players comprises
	second zone player	program instructions that, when executed by a first
	over the LAN, clock	Google Audio Player's at least one processor, cause that
	timing information	Google Audio Player to, after beginning to operate as the
	that comprises at	slave of the synchrony group, (i) receive, from the
	least one reading of	second Google Audio Player over the LAN, clock timing
	the clock time of the	information that comprises at least one reading of the
	second zone player;	clock time of the second Google Audio Player and (ii)
		based on the received clock timing information,

1	Claim 7	Google
2	based on the received	determine a differential between the clock time of the
3	clock timing	first Google Audio Player and the clock time of the
4	information,	second Google Audio Player.
5	determining a	For instance, each of the foregoing Google Audio
6	differential between	Players is programmed such that, after beginning to
7	the clock time of the	operate as a “slave” of a group, the Google Audio Player
8	first zone player and	is configured to (i) receive, from the “master” Google
9	the clock time of the	Audio Player of the group, clock timing information that
10	second zone player;	comprises at least one reading of the clock time of the
11		“master” player via data packets, such as 62-byte UDP
12	receiving, from the	packets, and (ii) based on the received clock timing
13	second zone player	information, determine a differential between its own
14	over the LAN, (a)	clock time and the clock time of the “master” Google
15	audio information for	Audio Player.
16	at least a first audio	Each of the foregoing Google Audio Players comprises
17	track and (b)	program instructions that, when executed by a first
18	playback timing	Google Audio Player’s at least one processor, cause that
19	information	Google Audio Player to, after beginning to operate as the
20	associated with the	slave of the synchrony group, receive, from the second
21	audio information for	Google Audio Player over the LAN, (a) audio
22	the first audio track	information for at least a first audio track and (b)
23	that comprises an	playback timing information associated with the audio
24	indicator of a first	information for the first audio track that comprises an
25	future time, relative	indicator of a first future time, relative to the clock time
26	to the clock time of	of the second Google Audio Player, at which the first and
27	the second zone	second Google Audio Players are to initiate synchronous
28	player, at which the	playback of the audio information for the first audio
	first and second zone	track.
	players are to initiate	For instance, each of the foregoing Google Audio
	synchronous	Players is programmed such that, after beginning to
	playback of the audio	operate as a “slave” of a group, the Google Audio Player
	information for the	is configured to receive, from the “master” Google
	first audio track;	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

Claim 7	Google
	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. <i>See also, e.g.,</i> Ex. 29; Ex. 69, 99, 106.
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. <i>See, e.g.,</i> Ex. 29; Ex. 69, 99, 106.

286. 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

1 the one or more claims of the ‘953 Patent. In particular, (a) Google had actual
2 knowledge of the ‘953 Patent or was willfully blind to its existence prior to (at
3 least as early as February 2019), and no later than, the filing of this action (see ¶¶
4 38-71 above), (b) Google intentionally causes, urges, or encourages users of the
5 Google Wireless Audio System to directly infringe one or more claims of the ‘953
6 Patent by promoting, advertising, and instructing customers and potential
7 customers about the Google Wireless Audio System and uses of the system,
8 including infringing uses (see Exs. 20, 29, 60, 61), (c) Google knows (or should
9 know) that its actions will induce users of the Google Wireless Audio System to
10 directly infringe one or more claims the ‘953 Patent, and (d) users of the Google
11 Wireless Audio System directly infringe one or more claims of the ‘953 Patent.
12 For instance, at a minimum, Google has supplied and continues to supply Google
13 Audio Players to customers while knowing that use of these products will infringe
14 one or more claims of the ‘953 Patent, and that Google’s customers then directly
15 infringe one or more claims of the ‘953 Patent by using these Google Audio
16 Players in accordance with Google’s product literature. *See, e.g., id.*

17 287. Additionally and/or alternatively, Google has indirectly infringed and
18 continued to indirectly infringe up to the date of expiration of the ‘953 Patent one
19 or more of the claims of the ‘953 Patent, in violation of 35 U.S.C. § 271(c), by
20 offering to sell or selling within the United States, and/or importing into the
21 United States, components in connection with the Google Wireless Audio System
22 that contribute to the direct infringement of the ‘953 Patent by users of the Google
23 Wireless Audio System. In particular, (a) Google had actual knowledge of the
24 ‘953 Patent or was willfully blind to its existence prior to (at least as early as
25 February 2019), and no later than, the filing of this action (see ¶¶ 38-71 above),
26 (b) Google offers for sale, sells, and/or imports, in connection with the Google
27 Wireless Audio System, one or more material components of the invention of the
28 ‘953 Patent that are not staple articles of commerce suitable for substantial

1 noninfringing use, (c) Google knows (or should know) that such component(s)
2 were especially made or especially adapted for use in an infringement of the ‘953
3 Patent, and (d) users of devices that comprise such material component(s) directly
4 infringe one or more claims of the ‘953 Patent. For instance, at a minimum,
5 Google offers for sale, sells, and/or imports software updates for Google Audio
6 Players that meet one or more claims of the ‘953 Patent. *See, e.g.*, Exs. 20, 29,
7 60, 61, 85. These software updates are material components of the Google Audio
8 Players that meet the one or more claims of the ‘953 Patent. Further, Google
9 especially made and/or adapted these software updates for use in the Google
10 Audio Players that meet the one or more claims of the ‘953 Patent, and these
11 software updates are not staple articles of commerce suitable for substantial
12 noninfringing use. Google’s customers then directly infringe the one or more
13 claims of the ‘953 Patent by installing and using software updates on the Google
14 Audio Players.

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

22 289. Additional allegations regarding Google’s pre-suit knowledge of the
23 ‘953 Patent and willful infringement will likely have evidentiary support after a
24 reasonable opportunity for discovery.

25 290. Sonos is in compliance with any applicable marking and/or notice
26 provisions of 35 U.S.C. § 287 with respect to the ‘953 Patent.
27
28

1 291. Sonos is entitled to recover from Google all damages that Sonos has
2 sustained as a result of Google’s infringement of the ‘953 Patent, including,
3 without limitation, a reasonable royalty and lost profits.

4 292. Google’s infringement of the ‘953 Patent was and continued to be
5 willful and deliberate, entitling Sonos to enhanced damages.

6 293. Google’s infringement of the ‘953 Patent is exceptional and entitles
7 Sonos to attorneys’ fees and costs incurred in prosecuting this action under 35
8 U.S.C. § 285.

9 **COUNT VII: INFRINGEMENT OF U.S. PATENT NO. 10,439,896⁹**

10 294. Sonos incorporates by reference and re-alleges paragraphs 47-55 and
11 120-136 of this Complaint as if fully set forth herein.

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

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

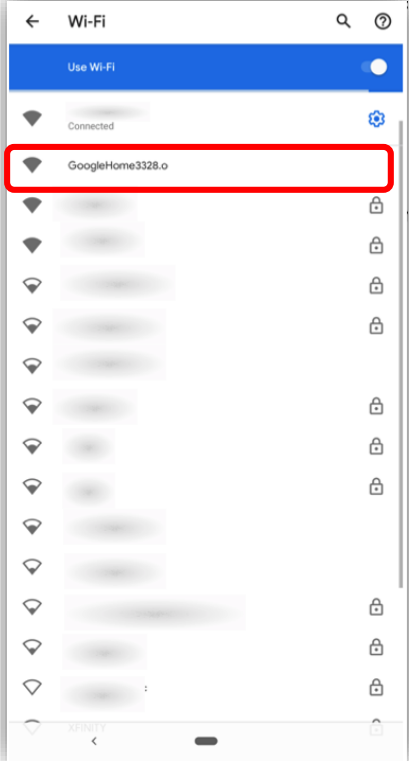
25
26 ⁹ Other than amending the Count number (i.e., from “Count V” to “Count VII”) Sonos has not amended this Count because Sonos understands the case is stayed as
27 to the non-expired originally asserted patents (i.e., the ‘959 Patent and the ‘896
28 Patent). Sonos reserves the right to amend this Count when the stay is lifted as to these patents.

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” ¹⁰) comprises a “computing device,” as recited in claim 1. At least each Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Chromecast, Chromecast Audio, and Chromecast Ultra 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. <i>See, e.g.</i> , Exs. 40-43, 87-92.
a network interface;	Each Chromecast-enabled computing device includes a network interface, such as a Wi-Fi interface. <i>See, e.g.</i> , Exs. 40-43, 87-92.
at least one processor;	Each Chromecast-enabled computing device includes at least one processor. <i>See, e.g.</i> , 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	Each Chromecast-enabled computing device includes a non-transitory computer-readable medium comprising program instructions that enable a Chromecast-enabled computing device to perform the functions identified below. <i>See, e.g.</i> , Exs. 34, 40-43, 87-92.

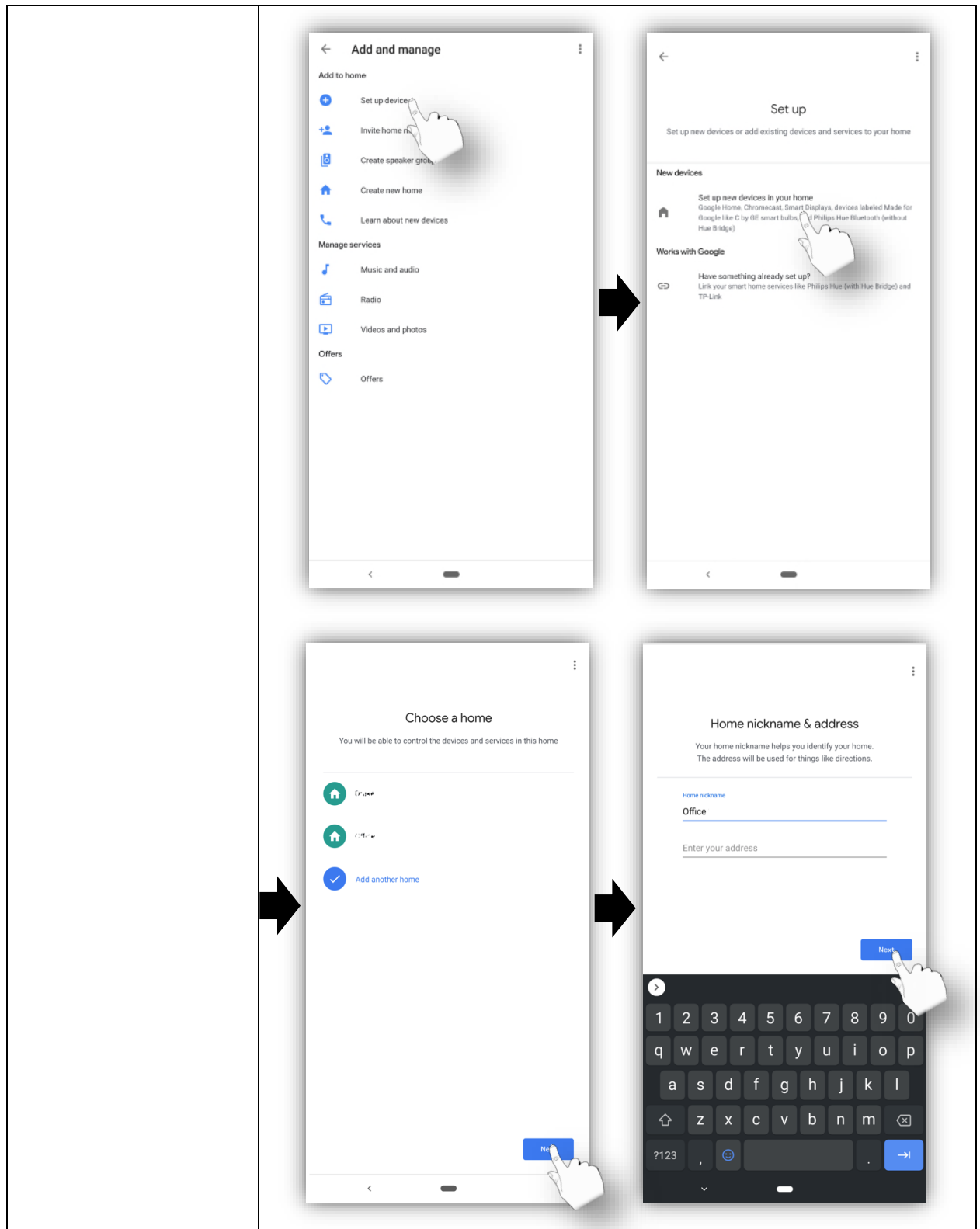
¹⁰ Each of the Pixel 3, Pixel 3 XL, Pixel 3a, Pixel 3a XL, Pixel 4, and Pixel 4 XL phones, the Pixel Slate tablet, and the Pixelbook and Pixelbook Go laptops installed with the Google Home app is an example of a “Chromecast-enabled computing device.”

1	Claim 1	Google
2	functions	
3	comprising:	
4	while operating on	Each Chromecast-enabled computing device comprises
5	a secure wireless	program instructions that, when executed by a Chromecast-
6	local area network	enabled computing device's at least one processor, cause
7	(WLAN) that is	that Chromecast-enabled computing device to, while
8	defined by an	operating on a secure WLAN that is defined by an access
9	access point, (a)	point, (a) receive, via a GUI associated with an application
10	receiving, via a	for controlling one or more Google Audio Players, user
11	graphical user	input indicating that a user wishes to set up a Google Audio
12	interface (GUI)	Player to operate on the secure WLAN and (b) receive a
13	associated with an	first message indicating that a given Google Audio Player
14	application for	is available for setup.
15	controlling one or	
16	more playback	For instance, each Chromecast-enabled computing device
17	devices, user input	is programmed with the capability to run the Google Home
18	indicating that a	app to setup and control Google Audio Players on a secure
19	user wishes to set	local Wi-Fi network (which is a WLAN) that is defined by
20	up a playback	an access point (<i>e.g.</i> , a router) to which the Chromecast-
21	device to operate	enabled computing device is communicatively coupled.
22	on the secure	<i>See, e.g.</i> , Ex. 101 ("The Google Home app will walk you
23	WLAN and (b)	through the steps to set up Google Home. . . . Choose the
24	receiving a first	Wi-Fi network you want to connect to your device. . . .
25	message indicating	Access your music and movie services."); Exs. 80, 102,
26	that a given	103.
27	playback device is	In particular, while communicatively coupled to a secure
28	available for setup;	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 (<i>e.g.</i> , after being plugged into a
		wall socket for the first time out of the box), the
		Chromecast-enabled computing device functions to receive
		a message indicating that the Google Audio Player is
		available for setup (<i>e.g.</i> , a message comprising an SSID for
		an unsecure wireless network provided by the Google
		Audio Player). Examples of these functions are illustrated
		in the following screenshots.

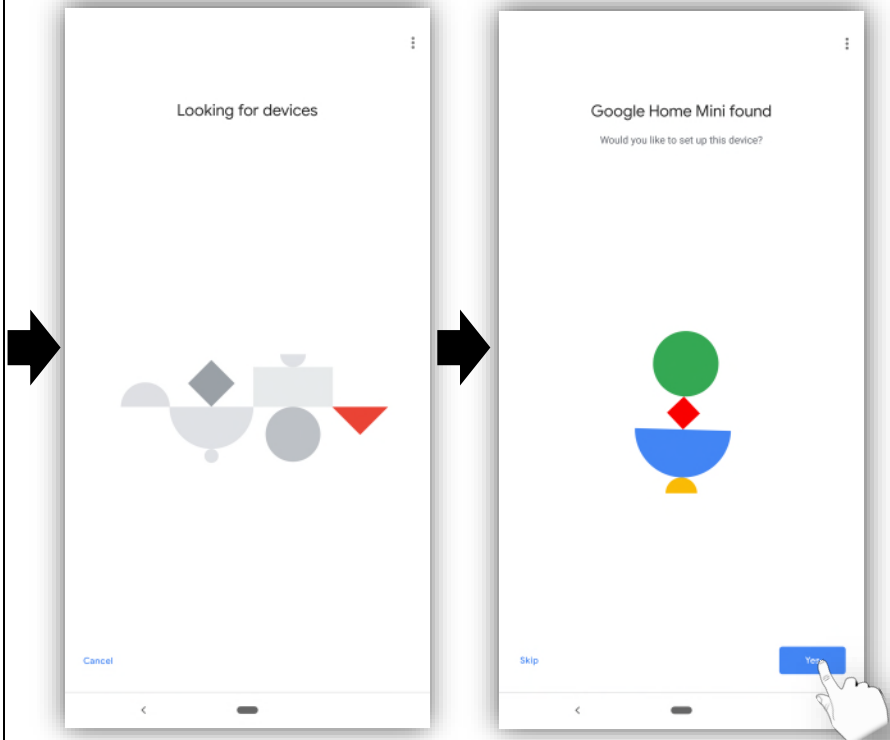
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28



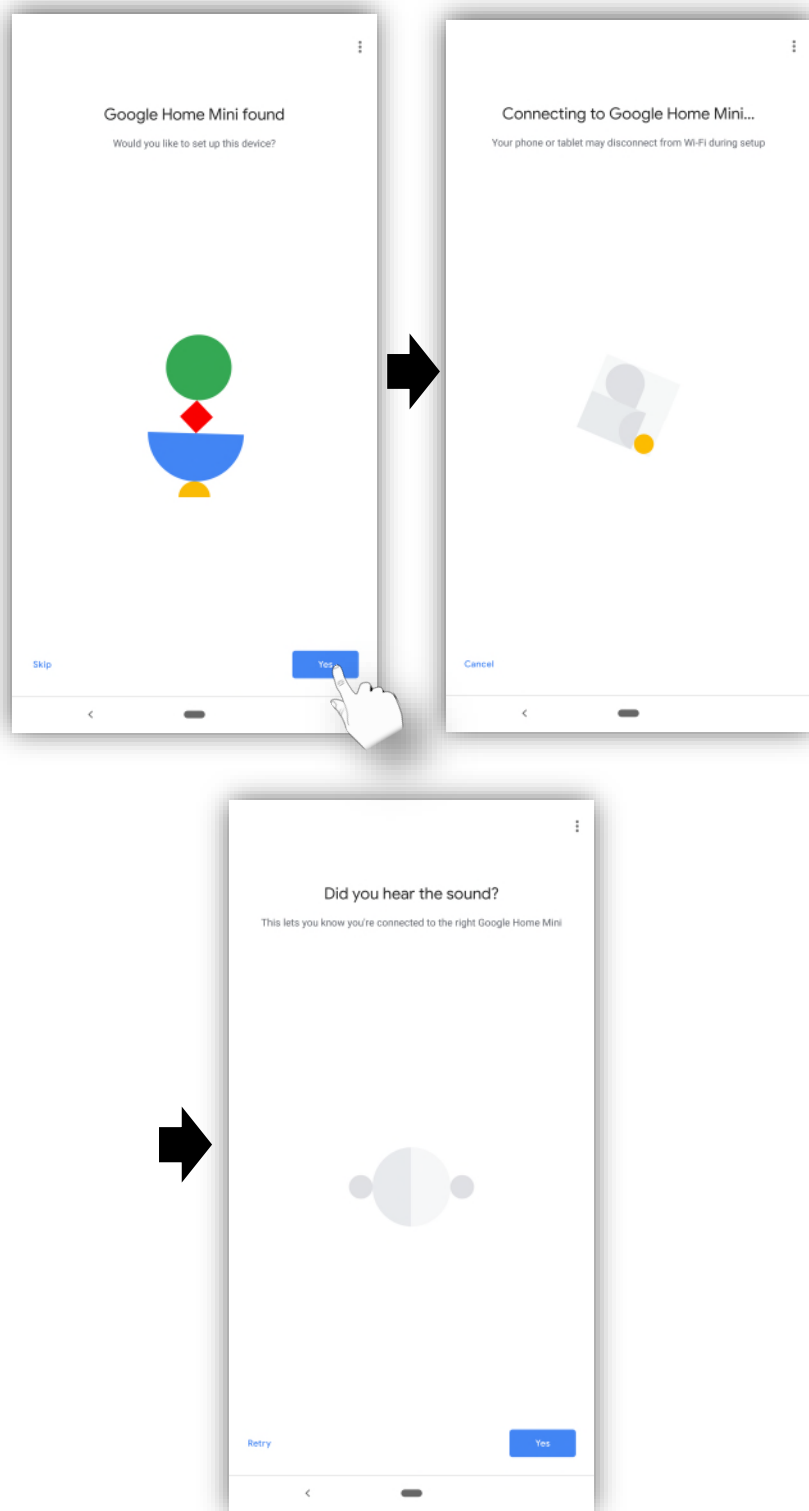
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	 See also, e.g., Ex. 101 (“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.”).
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	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 that initiates setting up a Google Audio Player on a secure local Wi-Fi network defined by an access point and a message indicating that the Google Audio Player is available for

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
playback device does not traverse the access point;	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 Chromecast-enabled computing device (<i>e.g.</i> , via an unsecure wireless network provided by the Google Audio Player), as opposed to traversing the access point for the secure local Wi-Fi network. <i>See, e.g.</i> , 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.”). An example of this functionality is illustrated in the screenshots below.

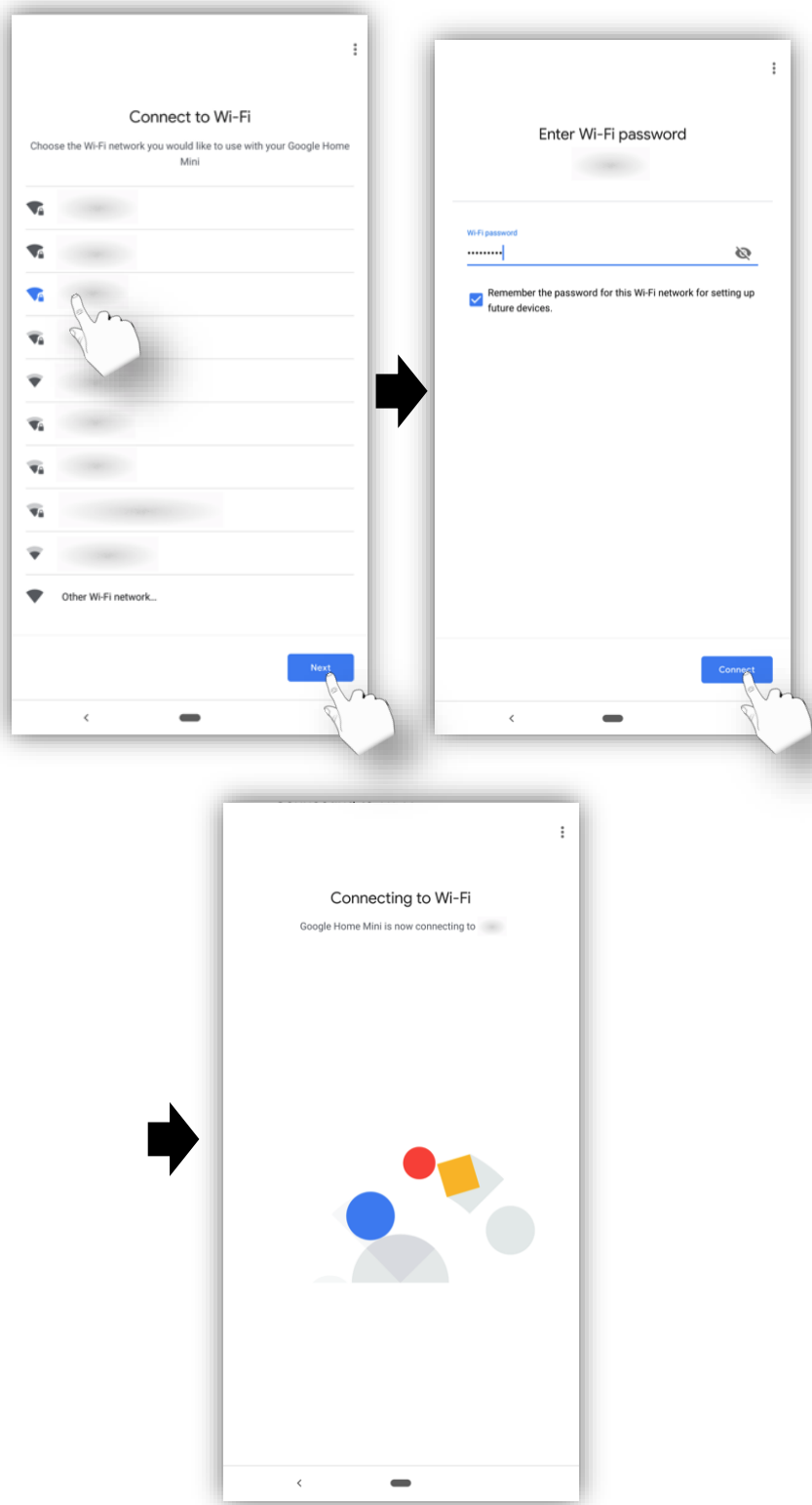
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	
transmitting, to the given playback device via the	Each Chromecast-enabled computing device comprises program instructions that, when executed by a Chromecast-enabled computing device's at least one processor, cause

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
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;	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, via the initial communication path, network configuration parameters for the secure local Wi-Fi network to the Google Audio Player that include an identifier of the secure local Wi-Fi network and a security key for the local Wi-Fi network. An example of this functionality is illustrated below.

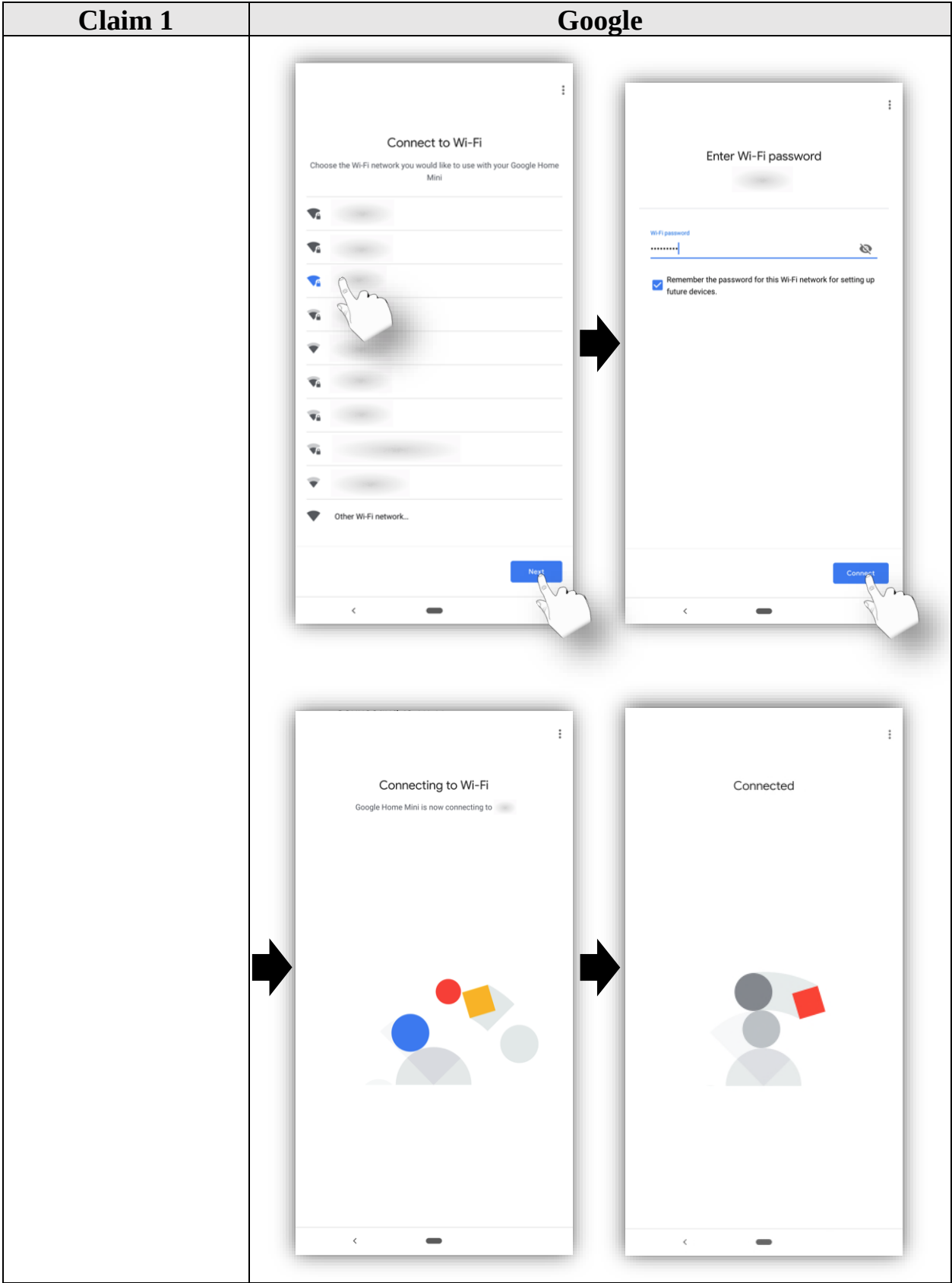
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 1	Google
	 The figure illustrates a three-step process for connecting a Google Home Mini device to a Wi-Fi network. Step 1: A screen titled 'Connect to Wi-Fi' prompts the user to 'Choose the Wi-Fi network you would like to use with your Google Home Mini'. It displays a list of available networks, each with a Wi-Fi icon and a name. A hand icon points to one of the networks. At the bottom right is a blue 'Next' button. Step 2: A screen titled 'Enter Wi-Fi password' prompts the user to enter the password. It features a text input field with a blue underline and a toggle icon on the right. Below the field is a checkbox labeled 'Remember the password for this Wi-Fi network for setting up future devices.' At the bottom right is a blue 'Connect' button. Step 3: A screen titled 'Connecting to Wi-Fi' shows the progress of the connection. It states 'Google Home Mini is now connecting to' followed by a blurred network name. At the bottom is the Google Home logo, which consists of four colored circles (blue, red, yellow, and grey) arranged in a cluster. Arrows indicate the flow from the first screen to the second, and from the second screen to the third. See also, e.g., Ex. 101 (“13. Wi-Fi connection: Choose the Wi-Fi network you want to connect to your device. . . . Tap

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

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.”).
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 a message 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.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28



1	Claim 1	Google
2	after detecting the	Each Chromecast-enabled computing device comprises
3	indication,	program instructions that, when executed by a Chromecast-
4	transitioning from	enabled computing device's at least one processor, cause
5	communicating	that Chromecast-enabled computing device to, after
6	with the given	detecting the indication, transition from communicating
7	playback device	with the given Google Audio Player via the initial
8	via the initial	communication path to communicating with the given
9	communication	Google Audio Player via the secure WLAN that is defined
10	path to	by the access point.
11	communicating	
12	with the given	For instance, each Chromecast-enabled computing device
13	playback device	is programmed such that, after detecting an indication that a
14	via the secure	Google Audio Player successfully received network
15	WLAN that is	configuration parameters for a secure local Wi-Fi network
16	defined by the	defined by an access point, the Chromecast-enabled
17	access point.	computing device functions to transition from
18		communicating with the Google Audio Player via the initial
19		communication path to communicating with the Google
20		Audio Player via the secure local Wi-Fi network. <i>See, e.g.,</i>
21		Ex. 101 ("13. Wi-Fi connection: Choose the Wi-Fi network
22		you want to connect to your device. . . . Tap OK to use the
23		password you have saved in your phone [or] [t]o manually
24		enter the password, tap Enter manually > type in password
25		> Connect.").
26		
27		As one example to illustrate, after the Chromecast-enabled
28		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
		related to playback of audio content to the Google Audio
		Player via the secure local Wi-Fi network, such as a
		command for the Google Audio Player to retrieve audio
		content for playback from an Internet-based music service
		(<i>e.g.,</i> 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 secure local Wi-Fi

Claim 1	Google
	network and the Internet. <i>See, e.g.</i>, 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.”); Exs. 104, 105.

297. 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 this action (see ¶¶ 35-38 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), (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

1 infringe one or more claims of the ‘896 Patent, and that Google’s customers then
2 directly infringe one or more claims of the ‘896 Patent by installing and/or using
3 the Google Home app in accordance with Google’s product literature. *See, e.g.,*
4 *id.*

5 298. Additionally and/or alternatively, Google has indirectly infringed and
6 continues to indirectly infringe one or more of the claims of the ‘896 Patent, in
7 violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United
8 States, and/or importing into the United States, components in connection with the
9 Google Wireless Audio System that contribute to the direct infringement of the
10 ‘896 Patent by users of the Google Wireless Audio System. In particular, (a)
11 Google had actual knowledge of the ‘896 Patent or was willfully blind to its
12 existence prior to, and no later than, the filing of this action (*see* ¶¶ 35-38 above),
13 (b) Google offers for sale, sells, and/or imports, in connection with the Google
14 Wireless Audio System, one or more material components of the invention of the
15 ‘896 Patent that are not staple articles of commerce suitable for substantial
16 noninfringing use, (c) Google knows (or should know) that such component(s)
17 were especially made or especially adapted for use in an infringement of the ‘896
18 Patent, and (d) users of devices that comprise such material component(s) directly
19 infringe one or more claims of the ‘896 Patent. For instance, at a minimum,
20 Google offers for sale, sells, and/or imports the Google Home app for installation
21 on devices (*e.g.*, smartphones, tablets, and computers) that meet one or more
22 claims of the ‘949 Patent. *See, e.g.*, Ex. 34, 35, 79, 80. The Google Home app is
23 a material component of the devices that meet the one or more claims of the ‘896
24 Patent. Further, Google especially made and/or adapted the Google Home app for
25 use in devices that meet the one or more claims of the ‘896 Patent, and this app is
26 not a staple article of commerce suitable for substantial noninfringing use.
27 Google’s customers then directly infringe the one or more claims of the ‘896
28 Patent by installing and/or using the Google Home app on the customers’ devices.

1 299. Google’s infringement of the ‘896 Patent is also willful because
2 Google (a) had actual knowledge of the ‘896 Patent or was willfully blind to its
3 existence prior to, and no later than, the filing of this action (see ¶¶ 35-38 above),
4 (b) engaged in the aforementioned activity despite an objectively high likelihood
5 that Google’s actions constituted infringement of the ‘896 Patent, and (c) this
6 objectively-defined risk was either known or so obvious that it should have been
7 known to Google.

8 300. Additional allegations regarding Google’s pre-suit knowledge of the
9 ‘949 Patent and willful infringement will likely have evidentiary support after a
10 reasonable opportunity for discovery.

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

13 302. Sonos is entitled to recover from Google all damages that Sonos has
14 sustained as a result of Google’s infringement of the ‘896 Patent, including,
15 without limitation, a reasonable royalty and lost profits.

16 303. Google’s infringement of the ‘896 Patent was and continues to be
17 willful and deliberate, entitling Sonos to enhanced damages.

18 304. Google’s infringement of the ‘896 Patent is exceptional and entitles
19 Sonos to attorneys’ fees and costs incurred in prosecuting this action under 35
20 U.S.C. § 285.

21 305. Google’s infringement of the ‘896 Patent has caused irreparable
22 harm (including the loss of market share) to Sonos and will continue to do so
23 unless enjoined by this Court.

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

25 306. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
26 205-220 of this First Amended Complaint as if fully set forth herein.

27 307. Google and/or users of the Google Wireless Audio System have
28 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.

308. 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 player to at least one data network;	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 configured to communicatively couple the Google Audio Player to a Wi-Fi network. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
at least one processor;	Each of the foregoing Google Audio Players includes at least one processor. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
a tangible, non-transitory computer-readable medium; and program instructions stored on the tangible, non-transitory computer-readable	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. <i>See, e.g.</i> , Exs. 68, 85, 95-98, 111-113.

1	Claim 12	Google
2	medium that are	
3	executable by the at	
4	least one processor	
5	such that the first zone	
6	player is configured to	
7	perform functions	
8	comprising:	
9	receiving, via the	Each of the foregoing Google Audio Players comprises
10	network interface, a	program instructions that, when executed by a first
11	request to engage in	Google Audio Player, cause the first Google Audio
12	synchronous playback	Player to receive, via its network interface, a request to
13	of audio content as part	engage in synchronous playback of audio content as
14	of a synchrony group	part of a synchrony group that includes at least a
15	that includes at least a	second Google Audio Player that is communicatively
16	second zone player that	coupled to the first Google Audio Player via the at least
17	is communicatively	one data network.
18	coupled to the first	
19	zone player via the at	For instance, each of the foregoing Google Audio
20	least one data network;	Players is programmed with the capability to receive
21		over a Wi-Fi network a request to engage in
22		synchronous playback of audio content as part of a
23		“group” that includes at least another Google Audio
24		Player that is on the same Wi-Fi network as the Google
25		Audio Player, where the request is from a Chromecast-
26		enabled computing device on the Wi-Fi network or a
27		Google cloud server that is communicatively coupled to
28		the Wi-Fi network, among other possibilities. <i>See e.g.</i> ,
		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[.]”

1	Claim 12	Google
2		<i>See, e.g., Ex. 122, 1245:12-25.</i>
3	after receiving the	Each of the foregoing Google Audio Players comprises
4	request to engage in	program instructions that, when executed by a first
5	synchronous playback	Google Audio Player, cause the first Google Audio
6	of audio content as part	Player to, after receiving the request to engage in
7	of the synchrony	synchronous playback of audio content as part of the
8	group:	synchrony group: (i) detect an indication that the
9	detecting an	Google Audio Player is to operate in (a) one of a
10	indication that the	control-master mode or a control-slave mode for the
11	first zone player is	synchrony group and (b) one of an audio-master mode
12	to operate in (a) one	or an audio-slave mode for the synchrony group and (ii)
13	of a control-master	begin to operate in the synchrony group in accordance
14	mode or a control-	with the indication.
15	slave mode for the	
16	synchrony group	For instance, as noted above, each of the foregoing
17	and (b) one of an	Google Audio Players is programmed with the
18	audio-master mode	capability to receive a request to engage in synchronous
19	or an audio-slave	playback of audio content as part of a “group.”
20	mode for the	
21	synchrony group;	In such a group, one of the Google Audio Players will
22	and	be designated to serve as the “master” of the group
23	beginning to	(sometimes referred to by Google as the “leader” of the
24	operate in the	group) and every other Google Audio Player will be
25	synchrony group in	designated to serve as a “slave” of the group
26	accordance with the	(sometimes referred to by Google as a “follower” of the
27	indication;	group). <i>See, e.g., Ex. 122, 1277:10-13, 1278:1-6.</i> Such
28		designations are the result of each Google Audio Player
		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.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Claim 12	Google
	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 respective leader quality of each other player. <i>See</i> 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.” <i>Id.</i>, 1253:19-23; <i>see also id.</i>, 1247:2-7, 1251:3-1252:9.

1	Claim 12	Google
2	wherein, while	While operating in the control-master mode for the
3	operating in the	synchrony group, a first Google Audio Player is
4	control-master mode	configured to: (i) receive, via its network interface, first
5	for the synchrony	control information for the synchrony group from a
6	group, the first zone	network device that is communicatively coupled to the
7	player is configured to:	first Google Audio Player; and (ii) based on the first
8	receive, via the	control information, cause, via its network interface, at
9	network interface,	least one playback action to be applied in the synchrony
10	first control	group.
11	information for the	Each of the foregoing Google Audio Players is
12	synchrony group	programmed such that, while operating as the “master”
13	from a network	of a group, a first Google Audio Player functions to (i)
14	device that is	receive from a Chromecast-enabled computing device
15	communicatively	on the same Wi-Fi network as the first Google Audio
16	coupled to the first	Player or a Google cloud server that is
17	zone player; and	communicatively coupled to the Wi-Fi network, among
18	based on the first	other possibilities, control information for the group,
19	control information,	such as control information indicating that the group
20	cause, via the	should initiate playing back media, and (ii) based on
21	network interface,	such control information, transmit one or more
22	at least one	messages to the “slave” Google Audio Player(s) via the
23	playback action to	“master” Google Audio Player’s network interface that
24	be applied in the	cause the “slave” Google Audio Player(s) to perform at
25	synchrony group;	least one playback action. <i>See, e.g.</i> , Ex. 122, 1259:20-
26		1260:5, 1268:23-1269:8, 1300:6-15, 1315:5-10.
27	wherein, while	While operating in the control-slave mode for the
28	operating in the	synchrony group, a first Google Audio Player is
29	control-slave mode for	configured to: (i) receive, via it network interface,
30	the synchrony group,	second control information from another Google Audio
31	the first zone player is	Player; and (ii) perform one or more playback actions
32	configured to:	in accordance with the second control information.
33	receive, via the	Each of the foregoing Google Audio Players is
34	network interface,	programmed such that, while operating as the “slave”
35	second control	of a group, a first Google Audio Player functions to
36	information from	receive via its network interface control information
37	another zone player;	from the group’s “master” Google Audio Player and
38	and	perform one or more playback actions (e.g., initiating
39	perform one or	playback of media) in accordance with the control
40	more playback	

1	Claim 12	Google
2	actions in	information. <i>See, e.g.</i> , Ex. 122, 1259:20-1260:5,
3	accordance with the	1268:23-1269:8, 1300:6-15.
4	second control	
5	information;	
6	wherein, while	While operating in the audio-master mode for the
7	operating in the audio-	synchrony group, a first Google Audio Player is
8	master mode for the	configured to: (i) obtain audio information that is
9	synchrony group, the	representative of the audio content; (ii) generate
10	first zone player is	playback timing information associated with the
11	configured to:	obtained audio information that is indicative of at least
12	obtain audio	one future time that is relative to a reference clock time
13	information that is	and denotes a time at which at least the first and second
14	representative of the	Google Audio Players are to engage in synchronous
15	audio content;	playback of a corresponding portion of the obtained
16	generate playback	audio information; and (iii) transmit, via its network
17	timing information	interface, the obtained audio information and the
18	associated with the	generated playback timing information to the second
19	obtained audio	Google Audio Player.
20	information that is	
21	indicative of at least	Each of the foregoing Google Audio Players is
22	one future time that	programmed such that, while operating as the “master”
23	is relative to a	of a group, a first Google Audio Player functions to
24	reference clock time	obtain audio information representative of the audio
25	and denotes a time	content from an audio source (e.g., an Internet-based
26	at which at least the	audio source) and transmits to at least one “slave”
27	first and second	Google Audio Player the audio information and
28	zone players are to	playback timing information that is (a) associated with
	engage in	the audio information, (b) generated by the first Google
	synchronous	Audio Player, and (c) indicative of at least one future
	playback of a	time that is relative to a reference clock time (e.g., the
	corresponding	first Google Audio Player’s clock time) and denotes a
	portion of the	time at which the Google Audio Players of the group
	obtained audio	are to engage in synchronous playback of a
	information; and	corresponding portion of the audio information.
	transmit, via the	
	network interface,	Public testimony from Google’s engineers and public
	the obtained audio	documentation evidence this functionality. For
	information and the	example, as explained by Google’s engineers, “in order
	generated playback	to play media onto a group, one of the devices in the
	timing information	group has to be the leader. That will be the device that

1	Claim 12	Google
2	to the second zone	actually will launch the application that you would like
3	player; and	to listen to, and that is what downloads the media from
4		the internet and then distributes the audio to the rest of
5		the devices.” Ex. 122, 1300:6-15. As another example,
6		a technical document (TX6454) Google published
7		during a jury trial (Ex. 122, 1238:10-24) states the
8		“leader” is responsible for “distributing the audio
9		stream to the follower devices,” where the “audio
10		stream would consist of audio frames with timestamps
11		from the leader’s monotonic system clock,” and “the
12		leader should designate a ‘synchronous start time’
13	wherein, while	where all followers that have good time sync start
14	operating in the audio-	playing.” Ex. 127, GOOG-SONOSWDTX-00048969;
15	slave mode for the	<i>see also id.</i> , GOOG-SONOSWDTX-00048970 (“Each
16	synchrony group, the	[audio] packet has an associated expiry time (ie, the
17	first zone player is	time that it should be played at).”).
18	configured to:	
19	receive, via the	While operating in the audio-slave mode for the
20	network interface,	synchrony group, a first Google Audio Player is
21	audio information	configured to (i) receive, via its network interface,
22	and playback timing	audio information and playback timing information
23	information	associated with the received audio information from
24	associated with the	another Google Audio Player; and (ii) engage in
25	received audio	synchronous playback of the received audio
26	information from	information with at least the second Google Audio
27	another zone player;	Player based on the received playback timing
28	and	information associated with the received audio
	engage in	information while a local clock time of the first Google
	synchronous	Audio Player differs from a local clock time of the
	playback of the	second Google Audio Player.
	received audio	
	information with at	Each of the foregoing Google Audio Players is
	least the second	programmed such that, while operating as the “slave”
	zone player based	of a group, a first Google Audio Player functions to (i)
	on the received	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

Claim 12	Google
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.	information while a local clock time of the “slave” Google Audio Player differs from a local clock time of the “master” Google Audio Player. <i>See, e.g.</i>, 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....”).

309. 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 this 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

1 customers while knowing that use of these products will infringe one or more
2 claims of the '001 Patent and that Google's customers then directly infringe one
3 or more claims of the '001 Patent by using these Google Audio Players in
4 accordance with Google's product literature. *See, e.g., id.*

5 310. Additionally and/or alternatively, Google has indirectly infringed and
6 continues to indirectly infringe one or more of the claims of the '001 Patent, in
7 violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United
8 States, and/or importing into the United States, components in connection with the
9 Google Wireless Audio System that contribute to the direct infringement of the
10 '001 Patent by users of the Google Wireless Audio System. In particular, (a)
11 Google had actual knowledge of the '001 Patent or was willfully blind to its
12 existence prior to (at least as early as August 2021), and no later than, the filing of
13 this First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers for sale,
14 sells, and/or imports, in connection with the Google Wireless Audio System, one
15 or more material components of the invention of the '001 Patent that are not
16 staple articles of commerce suitable for substantial noninfringing use, (c) Google
17 knows (or should know) that such component(s) were especially made or
18 especially adapted for use in an infringement of the '001 Patent, and (d) users of
19 devices that comprise such material component(s) directly infringe one or more
20 claims of the '001 Patent. For instance, at a minimum, Google offers for sale,
21 sells, and/or imports software updates for Google Audio Players that meet one or
22 more claims of the '001 Patent. *See, e.g.,* Ex. 20, 29, 60, 61, 85. These software
23 updates are material components of the Google Audio Players that meet the one or
24 more claims of the '001 Patent. Further, Google especially made and/or adapted
25 these software updates for use in the Google Audio Players that meet the one or
26 more claims of the '001 Patent, and these software updates are not staple articles
27 of commerce suitable for substantial noninfringing use. Google's customers then
28

1 directly infringe the one or more claims of the ‘001 Patent by installing and using
2 software updates on the Google Audio Players.

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

11 312. Additional allegations regarding Google’s pre-suit knowledge of the
12 ‘001 Patent and willful infringement will likely have evidentiary support after a
13 reasonable opportunity for discovery.

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

16 314. Sonos is entitled to recover from Google all damages that Sonos has
17 sustained as a result of Google’s infringement of the ‘001 Patent, including,
18 without limitation, a reasonable royalty and lost profits.

19 315. Google’s infringement of the ‘001 Patent was and continues to be
20 willful and deliberate, entitling Sonos to enhanced damages.

21 316. Google’s infringement of the ‘001 Patent is exceptional and entitles
22 Sonos to attorneys’ fees and costs incurred in prosecuting this action under 35
23 U.S.C. § 285.

24 317. Google’s infringement of the ‘001 Patent has caused irreparable
25 harm (including the loss of market share) to Sonos and will continue to do so
26 unless enjoined by this Court.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27
- 28

319. 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;

320. 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, and the '001 Patent.

321. 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;

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

323. Costs and expenses in this action;

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

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

19
20
21
22
23
24
25
26
27
28

Dated: October 15, 2024 Respectfully submitted,

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