

**UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

PARUS HOLDINGS INC.,	)	
	)	
Plaintiff,	)	
	)	Civil Action No. 6:19-cv-00437-ADA
v.	)	
	)	
LG ELECTRONICS, INC. and LG ELECTRONICS U.S.A., INC.,	)	<b>JURY TRIAL DEMANDED</b>
	)	
Defendant.	)	
	)	
	)	

**PARUS HOLDING INC.’S  
FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Parus Holdings Inc. (“Parus” or “Plaintiff”) for its First Amended Complaint for Patent infringement (“Complaint”) against LG Electronics, Inc. and LG Electronics U.S.A., Inc. (collectively “LG” or “Defendants”), hereby alleges as follows:

**THE PARTIES**

1. Plaintiff Parus Holdings Inc. is a Delaware corporation having its principal place of business at 3000 Lakeside Drive, Suite 110S, Bannockburn, IL 60015.
2. Parus is a privately-held company founded in 1997 that offers for sale and sells a number of voice-driven technology and speech search solutions to allow customers to spend less time managing their communication channels by allowing customers to search the Internet with their voice and receive audible search results back. These products include ParusSpeak™ Interactive Voice Response (IVR), ParusOne™ Unified Communications, ParusOffice™ Cloud PBX, and ParusMobile™ Mobile Applications. See <https://www.parus.ai/products/>. Parus’s

brands include Parus, obai, Webley, Webley MD, and Parus Interactive. Parus's voice-enabled search technology is in competition with LG Products implementing Google Assistant.

3. Parus is the owner by assignment of U.S. Patent No. 7,076,431 ("the '431 Patent") (attached as Exhibit 1) and U.S. Patent No. 9,451,084 ("the '084 Patent") (attached as Exhibit 2).

4. Defendant LG Electronics, Inc. is a Korean corporation with a principal place of business at LG Twin Towers, 128 Yeoui-daero, Yeongdungpo-gu, Seoul, 07366, South Korea. On information and belief, LG Electronics, Inc. is the entity that manufactures the LG-branded products sold in the United States, including the accused products in this case. On information and belief, in addition to making the products, LG Electronics, Inc. is responsible for research and development, product design, and sourcing of components.

5. Defendant LG Electronics U.S.A., Inc. is the North American subsidiary of LG Electronics, Inc., organized under the laws of Delaware, with a principal place of business at 1000 Sylvan Ave, Englewood Cliffs, NJ, 07632.

6. LG Electronics U.S.A, Inc. has regular and established places of business in Texas at least at 9420 Research Blvd, Austin, Texas 78759; 21251-2155 Eagle Parkway, Fort Worth, Texas 76177; and 14901 Beach St, Fort Worth, TX 76177.

7. On information and belief, LG maintains one or more regular and established places of business in Texas, including offices at 9420 Research Blvd, Austin, Texas 78759.

8. LG Electronics U.S.A., Inc. is registered to do business in Texas.

9. LG has placed or contributed to placing infringing products like the LG G8 ThinQ into the stream of commerce via an established distribution channel knowing or understanding that such products would be sold and used in the United States, including in the Western District

of Texas. On information and belief, LG also has derived substantial revenues from infringing acts in the Western District of Texas, including from the sale and use of infringing products like the LG G8 ThinQ.

10. LG had constructive notice of the '431 Patent based on Parus's marking at least as of June 18, 2007.

11. LG had constructive notice of the '084 Patent based on Parus's marking at least as of February 21, 2018.

### **JURISDICTION AND VENUE**

12. This is an action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code. Accordingly, this Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

13. This Court has specific personal jurisdiction over Defendants at least in part because Defendants conduct business in this Judicial District. Parus's causes of action arise, at least in part, from Defendants' contacts with and activities in the State of Texas and this Judicial District. Upon information and belief, Defendants have committed acts of infringement within the State of Texas and this Judicial District by, *inter alia*, directly and/or indirectly using, selling, offering to sell, or importing products that infringe one or more claims of the '431 Patent and/or the '084 Patent.

14. Defendants have committed acts within this District giving rise to this action, and have established sufficient minimum contacts with the State of Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

15. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391(b), (c), and 1400(b). Venue for Defendant LG Electronics, Inc., a foreign corporation, is proper in every judicial district in the U.S., including this one. Venue is proper for LG Electronics U.S.A., Inc.

because LG Electronics U.S.A., Inc. because LG Electronics USA, Inc.: (1) has a regular and established place of business in this Judicial District, and (2) has committed and continues to commit acts of patent infringement in this Judicial District by, *inter alia*, directly and/or indirectly using, selling, offering to sell, or importing products that infringe one or more claims of the '431 Patent and/or the '084 Patent.

**COUNT I**

**LG'S INFRINGEMENT OF U.S. PATENT NO. 7,076,431**

16. Parus restates and incorporates by reference all of the allegations made in the preceding paragraphs as though fully set forth herein.

17. Parus is the owner, by assignment, of the '431 Patent. A true copy of the '431 Patent granted by the U.S. Patent & Trademark Office is attached as Exhibit 1.

18. LG has directly infringed, and is continuing to directly infringe, literally or under the doctrine of equivalents, at least independent claim 1 of Parus's '431 Patent by making, using, selling, and/or offering for sale its smartphone products implementing the Google Android operating system, including Google Assistant, in the United States, in violation of 35 U.S.C. § 271(a).

19. LG had constructive notice of the '431 Patent based on Parus's marking at least as of June 18, 2007. LG had actual notice of the '431 Patent, and that the alleged acts constitute infringement of the '431 Patent, at or around August 2, through service of the original Complaint.

20. LG's continued acts of direct infringement of the '431 Patent, post-filing of this Complaint, are willful, and have caused and will continue to cause substantial damage and irreparable harm to Parus, and Parus has no adequate remedy at law.

21. Various products with Google Assistant made or sold by LG directly infringe at least independent claim 1 of the '431 Patent. Those LG products include at least the LG G8 ThinQ and other LG products that incorporate the Google Assistant (“LG Accused Products”).

22. The LG Accused Products in conjunction with Google Assistant is a system for retrieving information from pre-selected web sites by uttering speech commands into a voice enabled device and for providing to users retrieved information in an audio form via said voice enabled device.

23. The LG G8 ThinQ in conjunction with Google Assistant practices this claim. *See e.g.*, Andrew Nusca, *How voice recognition will change the world* (Nov. 4, 2011), available at <https://www.zdnet.com/article/how-voice-recognition-will-change-the-world/>, Gene Munster, Will Thompson, *Annual Digital Assistant IQ Test – Siri, Google Assistant, Alexa, Cortana* (Jul. 25, 2018), available at <https://loupventures.com/annual-digital-assistant-iq-test-siri-google-assistant-alexa-cortana/>, Extending the assistant (Jan. 29, 2019), available at <https://developers.google.com/actions/extending-the-assistant>, Voice Browsing (Jan. 29, 2019), available at <https://www.w3.org/standards/webofdevices/voice>, How Search organizes information (Jan. 29, 2019), available at <https://www.google.com/search/howsearchworks/crawling-indexing/>.


24. The LG G8 ThinQ in conjunction with Google Assistant is a voice enabled device because the LG G8 ThinQ includes a microphone and a speaker. *See e.g.*, [https://www.lg.com/us/support/products/documents/LG\\_G8\\_ThinQ\\_Tech\\_Specs\\_TMO\\_PDF\\_4-10-19\\_LMG820TMB.pdf](https://www.lg.com/us/support/products/documents/LG_G8_ThinQ_Tech_Specs_TMO_PDF_4-10-19_LMG820TMB.pdf).

25. Further, LG incorporates the Android operating system and the Google Assistant into its products. Google Assistant is built-in to LG Products including the LG G8 ThinQ. *See*

*e.g.*, Claire Reilly, LG partners with Google in 10-year patent deal (Jan. 29, 2019), available at <https://www.cnet.com/news/lg-partners-with-google-in-10-year-patent-deal/>. LG provides technical support for Google Assistant by including instructions for setting up and using the Google Assistant in its LG G8 ThinQ User Manual.

# Google Assistant

## Google Assistant overview

Your device has the built-in Google Assistant feature. Find answers and get things done while on-the-go. To get started, just press the Google Assistant key on the side of the device or touch and hold .



- To use this feature, first connect to the network and sign in to your Google Account.

*See e.g.*, LG G8 ThinQ User Manual at 26 available at <https://www.lg.com/us/support/manuals-documents?customerModelCode=LMG820TMB&csSalesCode=LMG820TMB.ATMOBK&category=CT10000027&subcategory=CT10000045>. Therefore, the operation of the LG Accused Products infringe for the same reasons as articulated below as to the Google Android operating system and the Google Assistant.

26. Google Assistant retrieves information from pre-selected websites that have already been crawled by the Googlebot.

## Googlebot

Googlebot is Google's web crawling bot (sometimes also called a "spider"). [Crawling](#) is the process by which Googlebot discovers new and updated pages to be added to the Google index.

We use a huge set of computers to fetch (or "crawl") billions of pages on the web. Googlebot uses an algorithmic process: computer programs determine which sites to crawl, how often, and how many pages to fetch from each site.

See e.g., <https://support.google.com/webmasters/answer/182072>.

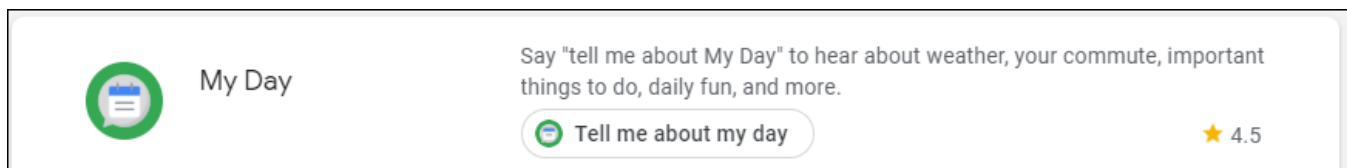
The crawling process begins with a list of web addresses from past crawls and sitemaps provided by website owners. As our crawlers visit these websites, they use links on those sites to discover other pages. The software pays special attention to new sites, changes to existing sites and dead links. Computer programs determine which sites to crawl, how often and how many pages to fetch from each site.

See e.g., <https://www.google.com/search/howsearchworks/crawling-indexing/>.

Like Siri, you can ask Google Assistant general questions. Unlike Siri, you'll likely find that Google can handle a wider range of questions than Siri can. That's because Google Assistant taps into Google's web-wide search results each and every time you search, making it more comprehensive.

See e.g., <https://searchengineland.com/google-assistant-guide-270312>.

27. The retrieved information is in an audio form via said voice enabled device. For example, Google indicates that one can “**hear** about weather, your commute, important things to do, daily fun, and more.”



See e.g., [https://assistant.google.com/explore?hl=en\\_us](https://assistant.google.com/explore?hl=en_us).

28. The LG Accused Products in conjunction with Google Assistant include a computer, said computer operatively connected to the internet.

29. For example, the LG G8 ThinQ includes an Octa-Core processor and operatively connects to the internet in normal usage. *See e.g.*, [https://www.lg.com/us/support/products/documents/LG\\_G8\\_ThinQ\\_Tech\\_Specs\\_TMO\\_PDF\\_4-10-19\\_LMG820TMB.pdf](https://www.lg.com/us/support/products/documents/LG_G8_ThinQ_Tech_Specs_TMO_PDF_4-10-19_LMG820TMB.pdf).

30. The LG Accused Products in conjunction with Google Assistant include a voice enabled device operatively connected to said computer, said voice enabled device configured to receive speech commands from users.

31. For example, LG G8 ThinQ in conjunction with Google Assistant is a voice enabled device because the LG G8 ThinQ includes a microphone and speaker and reacts to spoken commands through the Google Assistant. *See e.g.*, [https://www.lg.com/us/support/products/documents/LG\\_G8\\_ThinQ\\_Tech\\_Specs\\_TMO\\_PDF\\_4-10-19\\_LMG820TMB.pdf](https://www.lg.com/us/support/products/documents/LG_G8_ThinQ_Tech_Specs_TMO_PDF_4-10-19_LMG820TMB.pdf).



32. The LG Accused Products in conjunction with Google Assistant include at least one speaker-independent speech recognition device, said speaker-independent speech recognition device operatively connected to said computer and to said voice enabled device.

33. For example, the LG G8 ThinQ in conjunction with Google Assistant allows a user to talk to the device and to send commands to the cloud. The microphone operatively connected to the LG G8 ThinQ in conjunction with Google Assistant is configured to receive speech



commands from users.

## Launching Google Assistant

- 1 Touch and hold  on the Home screen.  
or  
Press the Google Assistant key on the left side of the device.  
or  
Say **"Ok Google"** when the screen is turned off or locked.
- 2 Say a command or question when you see  on the bottom of the screen.



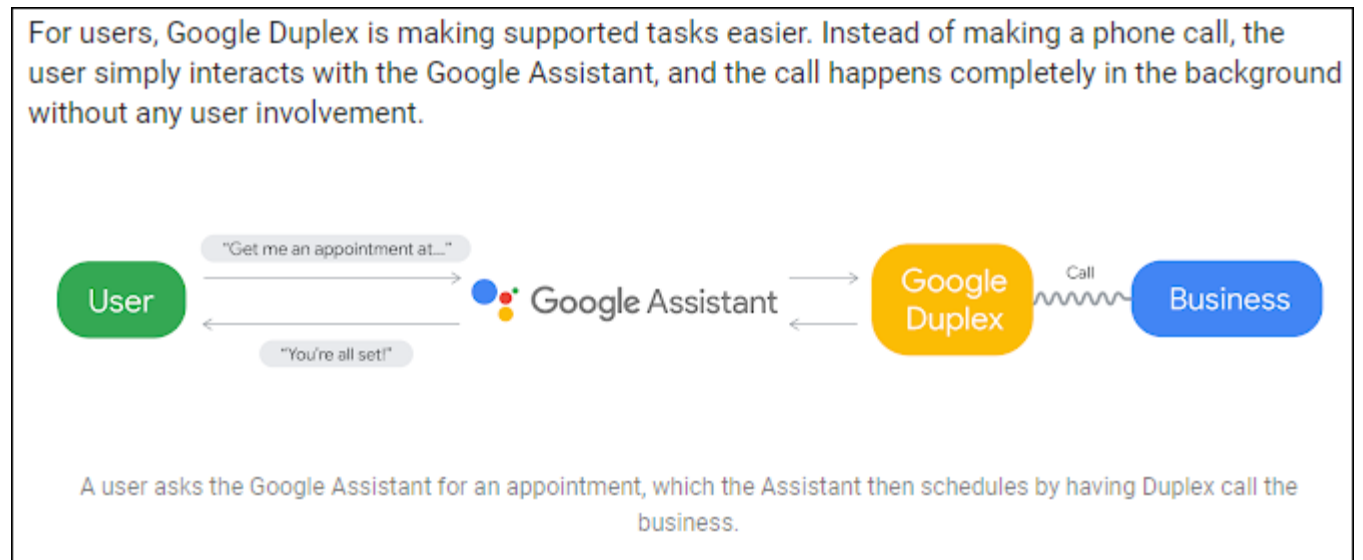
- Voice recognition accuracy may decrease if you speak with an unclear voice or in a noisy place. When you use the voice recognition feature, increase its accuracy by speaking with a clear voice in a quiet place.

See e.g., User Manual at 27, available at <https://www.lg.com/us/support/manuals->

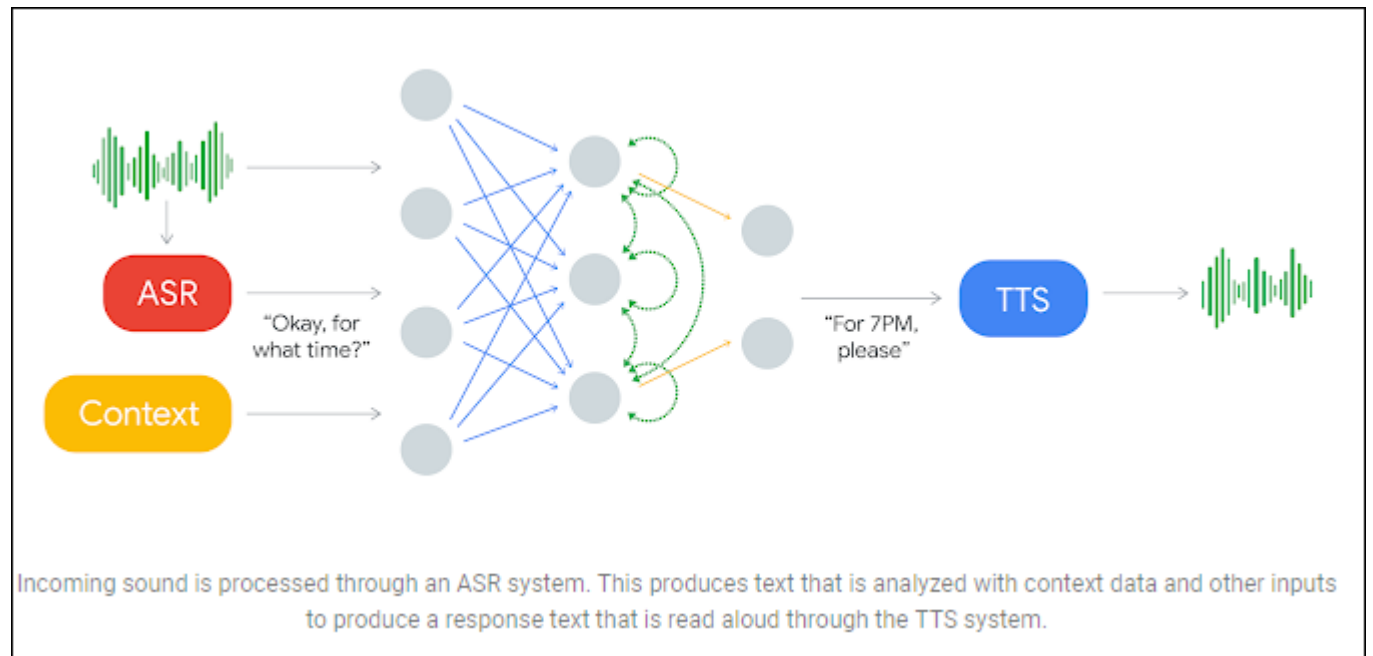
[documents?customerModelCode=LMG820TMB&csSalesCode=LMG820TMB.ATMOBK&category=CT10000027&subcategory=CT10000045](https://www.lg.com/us/support/manuals-documents?customerModelCode=LMG820TMB&csSalesCode=LMG820TMB.ATMOBK&category=CT10000027&subcategory=CT10000045).

34. The LG Accused Products in conjunction with Google Assistant include at least one speech synthesis device, said speech synthesis device operatively connected to said computer and to said voice enabled device.

35. For example, the LG G8 ThinQ in conjunction with Google Assistant can handle voice commands on the device itself or with help from the cloud.



See e.g., <https://ai.googleblog.com/2018/05/duplex-ai-system-for-natural-conversation.html>.



See *id.*

36. The LG Accused Products in conjunction with Google Assistant include at least one instruction set for identifying said information to be retrieved, said instruction set being associated with said computer.

37. For example, because the LG G8 ThinQ in conjunction with Google Assistant can handle voice commands on the device itself or with help from the cloud, there is an instruction set for identifying said information to be retrieved, said instruction set being associated with said computer. The LG G8 ThinQ with Google Assistant can handle voice commands on the device it is running on or with help from the cloud, there is an instruction set for identifying said information to be retrieved, said instruction set being associated with said computer. *See e.g.*, <https://blog.google/products/pixel/pixel-3-and-device-ai-putting-superpowers-your-pocket/>; *see also* <https://ai.googleblog.com/2018/05/duplex-ai-system-for-natural-conversation.html>.

38. The LG Accused Products in conjunction with Google Assistant include an instruction set comprising a plurality of pre-selected web site addresses, each said web site address identifying a web site containing said information to be retrieved.

39. The LG G8 ThinQ in conjunction with Google Assistant retrieves information from pre-selected websites that have already been crawled by the Googlebot. For example, Google indicates that Google Assistant retrieves information from pre-selected websites that have already been crawled by the Googlebot.

## Googlebot

Googlebot is Google's web crawling bot (sometimes also called a "spider"). [Crawling](#) is the process by which Googlebot discovers new and updated pages to be added to the Google index.

We use a huge set of computers to fetch (or "crawl") billions of pages on the web. Googlebot uses an algorithmic process: computer programs determine which sites to crawl, how often, and how many pages to fetch from each site.

*See e.g.*, <https://support.google.com/webmasters/answer/182072>.

Before you search, web crawlers gather information from across hundreds of billions of webpages and organize it in the Search index.

*See e.g.*, <https://www.google.com/search/howsearchworks/crawling-indexing/>.

When crawlers find a webpage, our systems render the content of the page, just as a browser does. We take note of key signals – from keywords to website freshness – and we keep track of it all in the Search index. The Google Search index contains hundreds of billions of webpages and is well over 100,000,000 gigabytes in size. It's like the index in the back of a book – with an entry for every word seen on every web page we index. When we index a web page, we add it to the entries for all of the words it contains.

*See id.*

Like Siri, you can ask Google Assistant general questions. Unlike Siri, you'll likely find that Google can handle a wider range of questions than Siri can. That's because Google Assistant taps into Google's web-wide search results each and every time you search, making it more comprehensive.

*See e.g.*, <https://searchengineland.com/google-assistant-guide-270312>.

40. The LG Accused Products in conjunction with Google Assistant include at least one recognition grammar associated with said computer, each said recognition grammar corresponding to each said instruction set and corresponding to a speech command.

41. For example, because the LG G8 ThinQ in conjunction with Google Assistant can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command. Google Assistant is described as handling voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command. *See e.g.*, <https://blog.google/products/pixel/pixel-3-and-device-ai-putting-superpowers-your-pocket/>; *see also* <https://ai.googleblog.com/2018/05/duplex-ai-system-for-natural-conversation.html>.

42. The LG Accused Products in conjunction with Google Assistant includes said speech command comprising an information request selectable by the user.

43. The LG G8 ThinQ in conjunction with Google Assistant is a system for retrieving information from pre-selected web sites by uttering speech commands into a voice enabled device. For example, Google indicates that the LG G8 ThinQ in conjunction with Google Assistant will make tasks easier. Google describes the Google Assistant on its web pages. *See e.g.*, <https://store.google.com/us/category/phones?hl=en-US>.

44. Google indicates that the Google Assistant will “help you find answers and control your phone and compatible smart home devices – all with a simple squeeze or by using your voice.”

The Google Assistant is also baked into Pixel 3 to help you find answers and control your phone and compatible smart home devices—all with a simple squeeze or by using your voice. This year we have two new Assistant features coming to Pixel.

*See e.g.*, <https://www.blog.google/products/pixel/google-pixel-3/>.

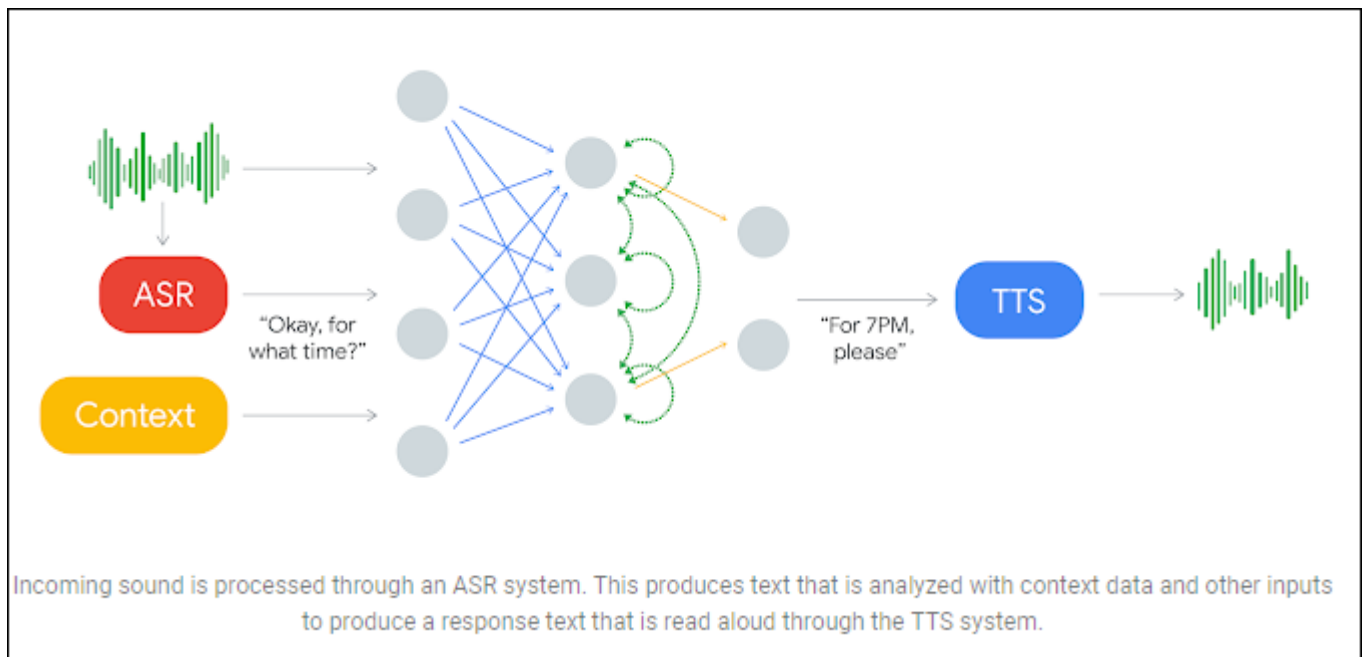
45. The LG Accused Products in conjunction with Google Assistant include said speaker-independent speech recognition device configured to receive from users via said voice enabled device said speech command and to select the corresponding recognition grammar upon receiving said speech command.

46. For example, because the LG G8 ThinQ in conjunction with Google Assistant can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command. For example, because the Google Assistant can handle voice commands on the device itself or with

help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command.

Bringing the best AI experiences to Pixel 3 involved some re-thinking from the ground up. Our phones are powerful computers with multiple sensors which enable new helpful and secure experiences when data is processed on your device. These AI-powered features can work offline and don't require a network connection. And they can keep data on device, private to you. With Pixel 3, we complement our traditional approach to AI, where machine learning and data processing is done in the cloud, with reliable, accessible AI on device, when you're on the go.

See e.g., <https://blog.google/products/pixel/pixel-3-and-device-ai-putting-superpowers-your-pocket/>.



See e.g., <https://ai.googleblog.com/2018/05/duplex-ai-system-for-natural-conversation.html>.

47. The LG Accused Products in conjunction with Google Assistant include said computer configured to retrieve said instruction set corresponding to said recognition grammar selected by said speaker-independent speech recognition device.

48. For example, because the LG G8 ThinQ in conjunction with Google Assistant can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command. For example, the Google Assistant can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command. *See e.g.*, <https://blog.google/products/pixel/pixel-3-and-device-ai-putting-superpowers-your-pocket/>; *see also*, <https://ai.googleblog.com/2018/05/duplex-ai-system-for-natural-conversation.html>.

49. The LG Accused Products in conjunction with Google Assistant includes said computer further configured to access at least one of said plurality of web sites identified by said instruction set to obtain said information to be retrieved, aid computer configured to first access said first web site of said plurality of web sites and, if said information to be retrieved is not found at said first web site, said computer configured to sequentially access said plurality of web sites until said information to be retrieved is found or until said plurality of web sites has been accessed.

50. The LG G8 ThinQ in conjunction with Google Assistant is a system for retrieving information from pre-selected web sites by uttering speech commands into a voice enabled device. For example, Google indicates that the LG G8 ThinQ in conjunction with Google Assistant will make tasks easier. The LG G8 ThinQ in conjunction with Google Assistant is a system for retrieving information from pre-selected web sites by uttering speech commands into a voice enabled device. For example, Google touts the Google Assistant on its web pages. *See e.g.*, <https://store.google.com/us/category/phones?hl=en-US>.

51. Google indicates that a phone in conjunction with Google Assistant will “help you find answers and control your phone and compatible smart home devices – all with a simple squeeze or by using your voice.” *See e.g.*, <https://www.blog.google/products/pixel/google-pixel-3/>.

52. Google Assistant retrieves information from pre-selected websites that have already been crawled by the Googlebot.

## Googlebot

Googlebot is Google's web crawling bot (sometimes also called a "spider"). [Crawling](#) is the process by which Googlebot discovers new and updated pages to be added to the Google index.

We use a huge set of computers to fetch (or "crawl") billions of pages on the web. Googlebot uses an algorithmic process: computer programs determine which sites to crawl, how often, and how many pages to fetch from each site.

*See e.g.*, <https://support.google.com/webmasters/answer/182072>.

Before you search, web crawlers gather information from across hundreds of billions of webpages and organize it in the Search index.

*See e.g.*, <https://www.google.com/search/howsearchworks/crawling-indexing/>.

The crawling process begins with a list of web addresses from past crawls and sitemaps provided by website owners. As our crawlers visit these websites, they use links on those sites to discover other pages. The software pays special attention to new sites, changes to existing sites and dead links. Computer programs determine which sites to crawl, how often and how many pages to fetch from each site.

*See id.*

Like Siri, you can ask Google Assistant general questions. Unlike Siri, you'll likely find that Google can handle a wider range of questions than Siri can. That's because Google Assistant taps into Google's web-wide search results each and every time you search, making it more comprehensive.

*See e.g.*, <https://searchengineland.com/google-assistant-guide-270312>.

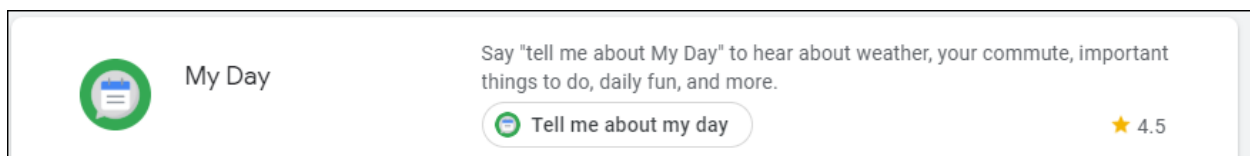
53. Google uses technology to discover and index web sites that have information that is subsequently used to respond to search requests. Upon receiving a specific search request,



Google’s search algorithms are configured to access the plurality of web sites in some “sequential” order (as by the ranking order of the websites, the ranking order specifies a sequence) until information pertinent to the request is found or until the web sites (in the ranking order defined) are accessed to find specific information to respond to the specific search request; Google’s operations meet the claimed recitation “said computer further configured to access at least one of said plurality of web sites identified by said instruction set to obtain said information to be retrieved” and “said computer configured to first access said first web site of said plurality of web sites” and if the information is not found at the first web site, Google’s search algorithms sequentially access the websites until the information is retrieved or until all the sources are considered.

54. The LG Accused Products in conjunction with Google Assistant include said speech synthesis device configured to produce an audio message containing any retrieved information from said pre-selected web sites, and said speech synthesis device further configured to transmit said audio message to said users via said voice enabled device.

55. For example, the retrieved information is in an audio form via said voice enabled device as Google indicates that one can “hear about weather, your commute, important things to do, daily fun, and more.”



See e.g., [https://assistant.google.com/explore?hl=en\\_us](https://assistant.google.com/explore?hl=en_us).

56. In addition to directly infringing the ’431 Patent, since around the service of the original Complaint, LG has indirectly infringed the ’431 Patent pursuant to 35 U.S.C. § 271(b). LG has had knowledge of the ’431 Patent and of the alleged acts that constitute infringement of

the '431 Patent since at least service of the original Complaint. By the time of trial, LG will have known and intended (since receiving such notice) that their continued actions would actively induce the infringement of the claims of the '431 Patent.

57. LG indirectly infringes the '431 Patent by instructing, directing and/or requiring others, including customers, purchasers, users and developers, to perform one or more of the steps of the method claims, either literally or under the doctrine of equivalents, of the '431 Patent, where all the steps of the method claims are performed by either the LG, its customers, purchasers, users, and developers, or some combination thereof. LG knew or should have known that it was inducing others, including customers, purchasers, users, and developers, to infringe by practicing one or more method claims of the '431 Patent.

58. Upon information and belief, LG knowingly and actively aided and abetted the direct infringement of the '431 Patent by instructing and encouraging its customers, purchasers, users, and developers to use the '431 Patent methods and technology. These instructions of encouragement include, but are not limited to, using the accused products as described in the claims of the '431 Patent, in advertising and promoting the use of the '431 Patent's claimed technology, and as further described above.

## **COUNT II**

### **LG'S INFRINGEMENT OF U.S. PATENT NO. 9,451,084**

59. Parus restates and incorporates by reference all of the allegations made in the preceding paragraphs as though fully set forth herein.

60. Parus is the owner, by assignment, of the '084 Patent. A true copy of the '084 Patent granted by the U.S. Patent & Trademark Office is attached as Exhibit 2.

61. LG has directly infringed, and is continuing to directly infringe, literally or under the doctrine of equivalents, at least independent claim 1 of Parus's '084 Patent by making, using, selling, and/or offering for sale its smartphone products implementing the Google Android operating system, including Google Assistant, in the United States, in violation of 35 U.S.C. § 271(a).

62. LG had constructive notice of the '084 Patent based on Parus's marking at least as of February 21, 2018. LG had actual knowledge of the '084 Patent, and of the alleged acts that constitute infringement of the '084 Patent, at or around August 2, 2019, through service of the original Complaint.

63. LG's continued acts of direct infringement of the '084 Patent, post-filing of this Complaint, are willful, and have caused and will continue to cause substantial damage and irreparable harm to Parus, and Parus has no adequate remedy at law.

64. The LG Accused Products in conjunction with Google Assistant form a system for acquiring information from one or more sources maintaining a listing of web sites by receiving speech commands uttered by users into a voice-enabled device and for providing information retrieved from the web sites to the users in an audio form via the voice-enabled device.

65. The LG G8 ThinQ in conjunction with Google Assistant practices this claim. *See e.g., Andrew Nusca, How voice recognition will change the world* (Nov. 4, 2011), available at <https://www.zdnet.com/article/how-voice-recognition-will-change-the-world/>, Gene Munster, Will Thompson, *Annual Digital Assistant IQ Test – Siri, Google Assistant, Alexa, Cortana* (Jul. 25, 2018), available at <https://loupventures.com/annual-digital-assistant-iq-test-siri-google-assistant-alexa-cortana/>, *Extending the assistant* (Jan. 29, 2019), available at


<https://developers.google.com/actions/extending-the-assistant>, Voice Browsing (Jan. 29, 2019), available at <https://www.w3.org/standards/webofdevices/voice>, How Search organizes information (Jan. 29, 2019), available at <https://www.google.com/search/howsearchworks/crawling-indexing/>.

66. The LG G8 ThinQ in conjunction with Google Assistant is a voice enabled device because the LG G8 ThinQ includes a microphone and a speaker. *See e.g.*, [https://www.lg.com/us/support/products/documents/LG\\_G8\\_ThinQ\\_Tech\\_Specs\\_TMO\\_PDF\\_4-10-19\\_LMG820TMB.pdf](https://www.lg.com/us/support/products/documents/LG_G8_ThinQ_Tech_Specs_TMO_PDF_4-10-19_LMG820TMB.pdf).

67. Google Assistant is built-in to LG Products including the LG G8 ThinQ. LG incorporates the Android operating system and the Google Assistant into its products. *See e.g.*, Claire Reilly, LG partners with Google in 10-year patent deal (Jan. 29, 2019), available at <https://www.cnet.com/news/lg-partners-with-google-in-10-year-patent-deal/>. LG provides technical support for Google Assistant by including instructions for setting up and using the Google Assistant in its LG G8 ThinQ User Manual.

# Google Assistant

## Google Assistant overview

Your device has the built-in Google Assistant feature. Find answers and get things done while on-the-go. To get started, just press the Google Assistant key on the side of the device or touch and hold .



- To use this feature, first connect to the network and sign in to your Google Account.

See e.g., LG G8 ThinQ User Manual at 26 available at <https://www.lg.com/us/support/manuals-documents?customerModelCode=LMG820TMB&csSalesCode=LMG820TMB.ATMOBK&category=CT10000027&subcategory=CT10000045>.

68. Google Assistant retrieves information from pre-selected websites that have already been crawled by the Googlebot.

## Googlebot

Googlebot is Google's web crawling bot (sometimes also called a "spider"). [Crawling](#) is the process by which Googlebot discovers new and updated pages to be added to the Google index.

We use a huge set of computers to fetch (or "crawl") billions of pages on the web. Googlebot uses an algorithmic process: computer programs determine which sites to crawl, how often, and how many pages to fetch from each site.

See e.g., <https://support.google.com/webmasters/answer/182072>.

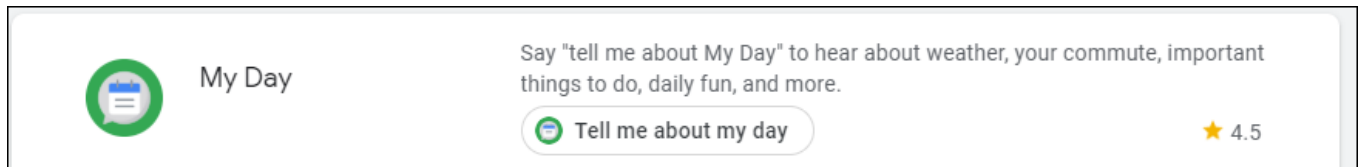
The crawling process begins with a list of web addresses from past crawls and sitemaps provided by website owners. As our crawlers visit these websites, they use links on those sites to discover other pages. The software pays special attention to new sites, changes to existing sites and dead links. Computer programs determine which sites to crawl, how often and how many pages to fetch from each site.

See e.g., <https://www.google.com/search/howsearchworks/crawling-indexing/>.

Like Siri, you can ask Google Assistant general questions. Unlike Siri, you'll likely find that Google can handle a wider range of questions than Siri can. That's because Google Assistant taps into Google's web-wide search results each and every time you search, making it more comprehensive.

See e.g., <https://searchengineland.com/google-assistant-guide-270312>.

69. The retrieved information is in an audio form via said voice enabled device. For example, Google indicates that one can “**hear** about weather, your commute, important things to do, daily fun, and more.”



See e.g., [https://assistant.google.com/explore?hl=en\\_us](https://assistant.google.com/explore?hl=en_us).

70. The LG Accused Products in conjunction with Google Assistant include at least one computing device, the computing device operatively coupled to one or more networks.

71. For example, the LG G8 ThinQ includes an Octa-Core processor and is connected to at least one network in normal operation. See e.g., [https://www.lg.com/us/support/products/documents/LG\\_G8\\_ThinQ\\_Tech\\_Specs\\_TMO\\_PDF\\_4-10-19\\_LMG820TMB.pdf](https://www.lg.com/us/support/products/documents/LG_G8_ThinQ_Tech_Specs_TMO_PDF_4-10-19_LMG820TMB.pdf).

72. The LG Accused Products in conjunction with Google Assistant include at least one speaker-independent speech-recognition device, the speaker-independent speech-recognition device operatively connected to the computing device and configured to receive the speech commands.

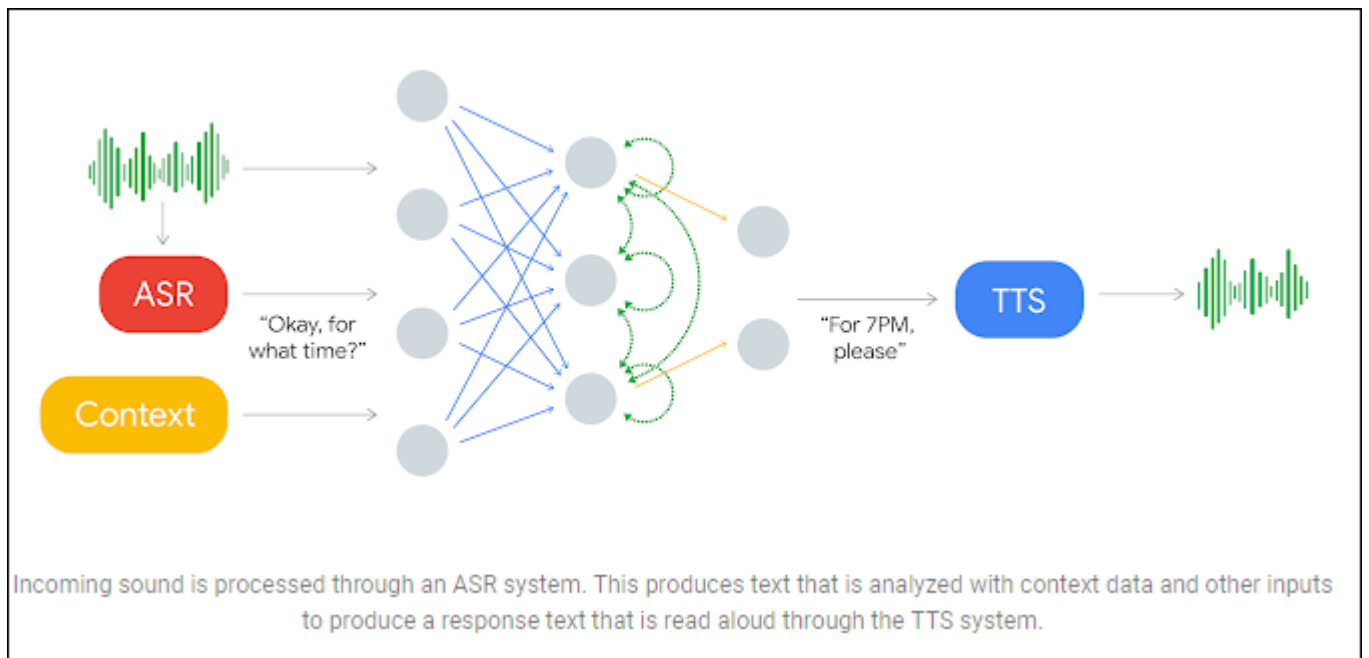
73. For example, the LG G8 ThinQ in conjunction with Google Assistant allows a user to talk through the device to send commands to the cloud. For example, a phone in conjunction with Google Assistant can handle voice commands on the device itself or with help from the cloud. See e.g., <https://blog.google/products/pixel/pixel-3-and-device-ai-putting-superpowers-your-pocket/>.

For users, Google Duplex is making supported tasks easier. Instead of making a phone call, the user simply interacts with the Google Assistant, and the call happens completely in the background without any user involvement.



A user asks the Google Assistant for an appointment, which the Assistant then schedules by having Duplex call the business.

See e.g., <https://ai.googleblog.com/2018/05/duplex-ai-system-for-natural-conversation.html>.



Incoming sound is processed through an ASR system. This produces text that is analyzed with context data and other inputs to produce a response text that is read aloud through the TTS system.

See *id.*

74. The LG Accused Products in conjunction with Google Assistant include at least one speech-synthesis device, the speech-synthesis device operatively connected to the computing device.

75. For example, the LG G8 ThinQ in conjunction with Google Assistant can handle voice commands on the device itself or with help from the cloud. For example, a phone in conjunction with Google Assistant can handle voice commands on the device itself or with help from the cloud and produce an audio response.

Bringing the best AI experiences to Pixel 3 involved some re-thinking from the ground up. Our phones are powerful computers with multiple sensors which enable new helpful and secure experiences when data is processed on your device. These AI-powered features can work offline and don't require a network connection. And they can keep data on device, private to you. With Pixel 3, we complement our traditional approach to AI, where machine learning and data processing is done in the cloud, with reliable, accessible AI on device, when you're on the go.

*See e.g.*, <https://blog.google/products/pixel/pixel-3-and-device-ai-putting-superpowers-your-pocket/>.

76. The LG Accused Products in conjunction with Google Assistant include a memory operatively associated with the computing device with at least one instruction set for identifying the information to be retrieved, the instruction set being associated with the computing device.

77. The LG G8 ThinQ includes a memory that is associated with the computing device and includes at least one instruction set for the Google Assistant in order to allow the Google Assistant to run. *See e.g.*, [https://www.lg.com/us/support/products/documents/LG\\_G8\\_ThinQ\\_Tech\\_Specs\\_TMO\\_PDF\\_4-10-19\\_LMG820TMB.pdf](https://www.lg.com/us/support/products/documents/LG_G8_ThinQ_Tech_Specs_TMO_PDF_4-10-19_LMG820TMB.pdf) /.

78. The LG Accused Products in conjunction with Google Assistant include at least one instruction set for identifying the information to be retrieved comprising a plurality of web site addresses for the listing of web sites, each web site address identifying a web site containing the information to be retrieved.



79. The LG G8 ThinQ in conjunction with Google Assistant retrieves information from websites that have already been crawled by the Googlebot. For example, Google indicates that a phone such as the LG G8 ThinQ in conjunction with Google Assistant retrieves information from pre-selected websites that have already been crawled by the Googlebot.

## Googlebot

Googlebot is Google's web crawling bot (sometimes also called a "spider"). [Crawling](#) is the process by which Googlebot discovers new and updated pages to be added to the Google index.

We use a huge set of computers to fetch (or "crawl") billions of pages on the web. Googlebot uses an algorithmic process: computer programs determine which sites to crawl, how often, and how many pages to fetch from each site.

See e.g., <https://support.google.com/webmasters/answer/182072>.

Before you search, web crawlers gather information from across hundreds of billions of webpages and organize it in the Search index.

See e.g., <https://www.google.com/search/howsearchworks/crawling-indexing/>.

When crawlers find a webpage, our systems render the content of the page, just as a browser does. We take note of key signals – from keywords to website freshness – and we keep track of it all in the Search index. The Google Search index contains hundreds of billions of webpages and is well over 100,000,000 gigabytes in size. It's like the index in the back of a book – with an entry for every word seen on every web page we index. When we index a web page, we add it to the entries for all of the words it contains.

See *id.*

Like Siri, you can ask Google Assistant general questions. Unlike Siri, you'll likely find that Google can handle a wider range of questions than Siri can. That's because Google Assistant taps into Google's web-wide search results each and every time you search, making it more comprehensive.

See e.g., <https://searchengineland.com/google-assistant-guide-270312>.

80. Google uses technology to crawl the web to index web sites with information to respond to a search request. The indexed websites are identified by web site addresses. These

indexed websites are “a plurality of pre-selected web site addresses,” and each such website “identif[ies] a web site containing said information to be retrieved.

81. The LG Accused Products in conjunction with Google Assistant include at least one recognition grammar associated with the computing device, each recognition grammar corresponding to each instruction set and corresponding to a speech command, the speech command comprising an information request provided by the user, the speaker-independent speech-recognition device configured to receive the speech command from the users via the voice-enabled device and to select the corresponding recognition grammar upon receiving the speech command.

82. For example, because the LG G8 ThinQ in conjunction with Google Assistant can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command. For example, because Google Assistant can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command on the device. *See e.g.*, <https://blog.google/products/pixel/pixel-3-and-device-ai-putting-superpowers-your-pocket/>; *see also* <https://ai.googleblog.com/2018/05/duplex-ai-system-for-natural-conversation.html>.

83. The LG Accused Products in conjunction with Google Assistant include the computing device configured to retrieve the instruction set corresponding to the recognition grammar provided by the speaker-independent speech-recognition device.

84. For example, because the LG G8 ThinQ in conjunction with Google Assistant can handle voice commands on the device itself or with help from the cloud, there is a recognition grammar corresponding to each said instruction set and corresponding speech command.

Bringing the best AI experiences to Pixel 3 involved some re-thinking from the ground up. Our phones are powerful computers with multiple sensors which enable new helpful and secure experiences when data is processed on your device. These AI-powered features can work offline and don't require a network connection. And they can keep data on device, private to you. With Pixel 3, we complement our traditional approach to AI, where machine learning and data processing is done in the cloud, with reliable, accessible AI on device, when you're on the go.

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85. The LG Accused Products in conjunction with Google Assistant include the computing device further configured to access at least one of the plurality of web sites identified by the instruction set to obtain the information to be retrieved, wherein the computing device is further configured to periodically search via the one or more networks to identify new web sites and to add the new web sites to the plurality of web sites, the computing device configured to access a first web site of the plurality of web sites and, if the information to be retrieved is not found at the first web site, the computer configured to access the plurality of web sites remaining in an order defined for accessing the listing of web sites until the information to be retrieved is found in at least one of the plurality of web sites or until the plurality of web sites have been accessed.

86. The LG G8 ThinQ in conjunction with Google Assistant is a system for retrieving information from web sites by uttering speech commands into a voice enabled device. For example, Google indicates that the LG G8 ThinQ in conjunction with Google Assistant will make tasks easier. Google touts the Google Assistant on its web pages. See e.g., <https://store.google.com/us/category/phones?hl=en-US>.

87. Google indicates that a phone such as the LG G8 ThinQ in conjunction with Google Assistant will “help you find answers and control your phone and compatible smart home devices – all with a simple squeeze or by using your voice.”

The Google Assistant is also baked into Pixel 3 to help you find answers and control your phone and compatible smart home devices—all with a simple squeeze or by using your voice. This year we have two new Assistant features coming to Pixel.

See e.g., <https://www.blog.google/products/pixel/google-pixel-3/>; see also, <https://ai.googleblog.com/2018/05/duplex-ai-system-for-natural-conversation.html>.

88. Google Assistant retrieves information from pre-selected websites that have already been crawled by the Googlebot.

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The crawling process begins with a list of web addresses from past crawls and sitemaps provided by website owners. As our crawlers visit these websites, they use links on those sites to discover other pages. The software pays special attention to new sites, changes to existing sites and dead links. Computer programs determine which sites to crawl, how often and how many pages to fetch from each site.

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When crawlers find a webpage, our systems render the content of the page, just as a browser does. We take note of key signals – from keywords to website freshness – and we keep track of it all in the Search index. The Google Search index contains hundreds of billions of webpages and is well over 100,000,000 gigabytes in size. It's like the index in the back of a book – with an entry for every word seen on every web page we index. When we index a web page, we add it to the entries for all of the words it contains.

*See id.*

Like Siri, you can ask Google Assistant general questions. Unlike Siri, you'll likely find that Google can handle a wider range of questions than Siri can. That's because Google Assistant taps into Google's web-wide search results each and every time you search, making it more comprehensive.

*See e.g.*, <https://searchengineland.com/google-assistant-guide-270312>.

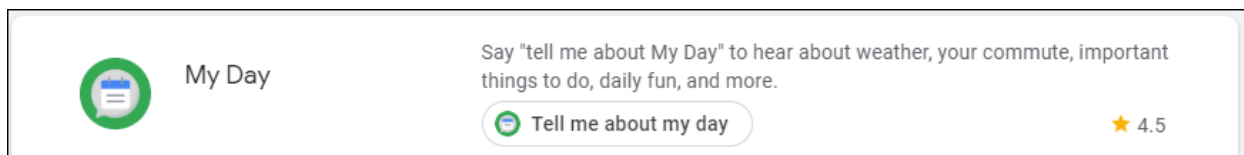
89. Google uses technology to “crawl” the web to “index” web sites with information to respond to a search request; Google’s “crawling” technology discovers “new web sites” periodically, either on its own or adds them if provided by website owners, in an effort to constantly provide updated data. Further, Google’s operations access the websites in a defined order (as ranked) until the information to respond to a search request is found or until the list of information sources or websites have been considered.

90. The LG Accused Products in conjunction with Google Assistant include the speech synthesis device configured to produce an audio message containing any retrieved information from the plurality of web sites.

91. For example, the LG G8 ThinQ in conjunction with Google Assistant forms the retrieved information into an audio form via said voice enabled device as Google indicates that one can “hear about weather, your commute, important things to do, daily fun, and more.” *See e.g.*, [https://assistant.google.com/explore?hl=en\\_us](https://assistant.google.com/explore?hl=en_us).

92. The LG Accused Products in conjunction with Google Assistant includes the speech synthesis device further configured to transmit the audio message to the users via the voice-enabled device.

93. For example, the retrieved information is in an audio form via said voice enabled device as Google indicates that one can “hear about weather, your commute, important things to do, daily fun, and more.”



94. See e.g., [https://assistant.google.com/explore?hl=en\\_us](https://assistant.google.com/explore?hl=en_us). In addition to directly infringing the '084 Patent, since around the filing of the original Complaint, LG indirectly infringes the '084 Patent pursuant to 35 U.S.C. § 271(b). LG has had knowledge of the '084 Patent and of the alleged acts that constitute infringement of the '084 Patent, since at least service of the original Complaint. By the time of trial, LG will have known and intended (since receiving such notice) that their continued actions would actively induce the infringement of the claims of the '084 Patent.

95. LG indirectly infringes the '084 Patent by instructing, directing and/or requiring others, including customers, purchasers, users and developers, to perform one or more of the steps of the method claims, either literally or under the doctrine of equivalents, of the '084 Patent, where all the steps of the method claims are performed by either LG, its customers, purchasers, users, and developers, or some combination thereof. LG knew or should have known that it was inducing others, including customers, purchasers, users, and developers, to infringe by practicing, either themselves or in conjunction with LG, one or more method claims of the '084 Patent.

96. Upon information and belief, LG knowingly and actively aided and abetted the direct infringement of the '084 Patent by instructing and encouraging its customers, purchasers, users, and developers to use the '084 Patent methods and technology. These instructions of encouragement include, but are not limited to, using the accused products as described in the claims of the '084 Patent, in advertising and promoting the use of the '084 Patent's claimed technology, and as further described in above.

**PRAYER FOR RELIEF**

WHEREFORE, Parus request the Court grant the relief set forth below:

- A. Enter judgment that LG has infringed, and continues to infringe, one or more claims of the '431 Patent and/or the '084 Patent;
- B. Enter judgment that LG's acts of patent infringement are willful post-filing of the Complaint;
- C. Temporarily, preliminarily, or permanently enjoin LG, their parents, subsidiaries, affiliates, divisions, officers, agents, servants, employees, directors, partners, representatives, all individuals and entities in active concert and/or participation with them, and all individuals and/or entities within their control from engaging in the aforesaid unlawful acts of patent infringement;
- D. Order LG to account for and pay damages caused to Parus by LG's unlawful acts of patent infringement;
- E. Award Parus increased damages and attorney fees pursuant to 35 U.S.C. §§ 284 and 285;
- F. Award Parus the interest and costs incurred in this action; and
- G. Grant Parus such other and further relief, including equitable relief, as the Court deems just and proper.

**DEMAND FOR JURY TRIAL**

Plaintiff demands a jury trial for all issues deemed to be triable by a jury.

Dated: December 5, 2019

Respectfully submitted,

/s/ Michael McNamara w/permission Andrea  
L. Fair

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*Counsel for Plaintiff Parus Holdings Inc.*



**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that a true and correct copy of the foregoing document has been served on December 5, 2019 to all counsel of record who are deemed to have consented to electronic service via the Court's CM/ECF system.

*/s/ Andrea L. Fair*  
\_\_\_\_\_  
Andrea L. Fair

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