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

SPACETIME3D, INC., **Plaintiff,** **v.** **APPLE INC.,** **Defendant.**	**Case No.** **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

1. Plaintiff SpaceTime3D, Inc., complains against Defendant Apple Inc. as follows:

THE PARTIES

2. Plaintiff SpaceTime3D, Inc., is an application software company incorporated in New York, NY. Founded by Ezra Eddie Bakhash ("Mr. Bakhash"), SpaceTime3D delivers a seamless digital experience for consumers by using imaging and three-dimensional graphical technology to remove and expand the visual and spatial constraints on small screen displays.

3. On information and belief, Defendant Apple Inc. is a California corporation with a principal place of business at One Apple Park Way, Cupertino, California 95014.

4. On information and belief, Apple maintains regular and established places of business in Texas and in the Western District of Texas specifically, including offices at 5501 West Parmer Lane, Austin, Texas and 12535 Riata Vista Circle, Austin, Texas.

5. Apple also operates retail establishments in the Western District of Texas, including retail stores in Barton Creek, Austin, Texas and Domain Northside, Austin, Texas.

APPLE 1004

6. Further, the construction of Apple's new $1 billion, 3-million-square-foot Austin campus is underway. Apple has announced that this new 133-acre campus, located on or around West Parmer Lane and Dallas Drive, will "initially house 5,000 employees, with the capacity to grow to 15,000."[1] Apple has shared that employees will start moving into the new campus this year.[2]

Fig. 1. Rendering of Apple's $1 billion Austin campus from Apple's April 26, 2021 press release.

[1] Apple, *Apple expands in Austin* (Nov. 20, 2019), https://www.apple.com/newsroom/2019/11/apple-expands-in-austin/ (accessed Feb. 9, 2022).

[2] Apple, *Apple commits $430 billion in US Investments over five years* (Apr. 26, 2021), https://www.apple.com/newsroom/2021/04/apple-commits-430-billion-in-us-investments-over-five-years/ (accessed Feb. 9, 2022).

Fig. 2. Aerial view of Apple's Austin campus from Apple's November 20, 2019 press release.

7. Apple also manufactures its products in Austin and has done so since at least 2013.[3]

8. On information and belief, Apple employs thousands of people based in the Western District of Texas and does business in this District and across Texas. Apple's employees in Austin include Software Engineers;[4] Senior Software Engineers;[5] and UI and UX Designers.[6]

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[3] Apple, *Apple's new Mac Pro to be made in Texas* (Sept. 23, 2019), https://www.apple.com/newsroom/2019/09/apples-new-mac-pro-to-be-made-in-texas/ (accessed Feb. 9, 2022); Jack Nicas, "No, That Mac Factory in Texas Is Not New," The New York Times (Nov. 20, 2019), https://www.nytimes.com/2019/11/20/us/politics/trump-texas-apple-factory.html (accessed Feb. 9, 2022) (reporting that Apple's plant in Austin has been making Apple computers since 2013).

[4] *See, e.g.*, LinkedIn, *Software Engineer at Apple*, https://www.linkedin.com/in/dinakar-pulakhandam-26946222/ (accessed Feb. 9, 2022); LinkedIn, *Software Engineer at Apple*, https://www.linkedin.com/in/deepthi-a-40771b176/ (accessed Feb. 9, 2022); LinkedIn, *Software Engineer at Apple*, https://www.linkedin.com/in/thomas-croft-b695a941/ (accessed Feb. 9, 2022); LinkedIn, *Software Engineer at Apple*, https://www.linkedin.com/in/adarsh-suresh-mangalath-675b8992/ (accessed Feb. 9, 2022); LinkedIn, *Software Engineer at Apple*, https://www.linkedin.com/in/reuben-rappaport/ (accessed Feb. 9, 2022).

[5] *See, e.g.*, LinkedIn, *Senior Software Engineer at Apple*, https://www.linkedin.com/in/steven-kelsch-351a253/ (accessed Feb. 9, 2022); LinkedIn, *Senior Software Engineer at Apple*, https://www.linkedin.com/in/shahvidhi/ (accessed Feb. 9, 2022).

[6] *See, e.g.*, LinkedIn, *UI/UX Designer at Apple*, https://www.linkedin.com/in/samantha-lanier-b6493a32/ (accessed Feb. 9, 2022); LinkedIn, *UX Designer at Apple*, https://www.linkedin.com/in/blainebogar/ (accessed Feb. 9, 2022).

Given the location of such Apple employees in Austin, on information and belief, documents and witnesses relevant to this action are located in this District.

9. Apple's website lists numerous job openings in its Austin offices, including for various software engineering roles. For example, Apple has open positions in Austin for a "UI Engineer" to work within its Systems and Technology organization to "build[] leading edge custom applications that serve Apple customers and partners";[7] a "Software Engineer – Core Drivers" to "work on Apple platforms; iOS, OS X, tvOS and watchOS" to "design and implement platform level features that encompass interfacing with drivers to higher level frameworks";[8] a "System Performance Engineer" to "work on . . . operating systems for iPhone, iPad, Apple Watch, Mac, AppleTV, and several other 'black box' secret projects";[9] and "Software Development Engineer in Test (Swift)" to "create[] solutions centered around apps, services, tools, and systems that help Apple engineering teams worldwide realize the vision of the products they invent."[10]

10. Apple has placed or contributed to placing infringing products, including but not limited to the iPhone 12, into the stream of commerce via established distribution channels, knowing or understanding that such products would be sold and used in the United States, including in the Western District of Texas. Apple has also derived substantial revenue from infringing acts in the Western District of Texas, including from the sale and use of infringing products, including but not limited to the iPhone 12.

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[7] Careers at Apple, *UI Engineer*, https://jobs.apple.com/en-us/details/200231591/ui-engineer?team=SFTWR (accessed Jan. 14, 2022).

[8] Careers at Apple, *Software Engineer – Core Drivers*, https://jobs.apple.com/en-us/details/200300508/software-engineer-core-drivers?team=SFTWR (accessed Jan. 14, 2022).

[9] Careers at Apple, *System Performance Engineer*, https://jobs.apple.com/en-us/details/200331944/system-performance-engineer?team=SFTWR (accessed Jan. 14, 2022).

[10] Careers at Apple, *Software Development Engineer in Test (Swift)*, https://jobs.apple.com/en-us/details/200246889/software-development-engineer-in-test-swift?team=SFTWR (accessed Jan. 14, 2022).

11. On information and belief, Apple designs, manufactures, distributes, imports, offers for sale, and/or sells in Texas and the Western District of Texas devices like iPhones, iPod touches, iPads, and Apple Watches that infringe the Patents asserted in this matter.

12. Apple may be served through its Texas registered agent for service of process, CT Corporation System, 1999 Bryan St., Ste. 900, Dallas, Texas 75201.

JURISDICTION AND VENUE

13. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.*

14. This Court has personal jurisdiction over Apple because it has done and continues to do business in Texas, has committed and continues to commit acts of patent infringement in Texas, and has established minimum contacts with this forum state such that the exercise of jurisdiction over Apple would not offend the traditional notions of fair play and substantial justice. Upon information and belief, Apple transacts substantial business in Texas, including making, using, offering to sell and/or selling accused products in Texas, and/or inducing others to commit acts of patent infringement in Texas.

15. Venue is proper against Apple in this District pursuant to 28 U.S.C. § 1400(b) because it has maintained regular and established physical places of business in this District and has committed acts of patent infringement in the District. *See In re Cray Inc.*, 871 F.3d 1355, 1362-63 (Fed. Cir. 2017).

PATENTS-IN-SUIT

16. SpaceTime3D is the assignee of United States Patent No. 8,881,048 (the "'048 patent"), entitled "System and Method for Providing Three-Dimensional Graphical User Interface," a true and correct copy of which is attached as **Exhibit A**. The '048 patent is designated

a continuation of the application resulting in an earlier 7,735,018 patent (the "'018 patent"); bears a domestic filing date of March 31, 2010; and was duly and legally issued by the PTO on November 4, 2014. Mr. Bakhash is the sole inventor of the '048 patent.

17. SpaceTime3D is also the assignee of United States Patent No. 9,304,654 (the "'654 patent"), entitled "System and Method for Displaying a Timeline Associated with a Plurality of Applications," a true and correct copy of which is attached as **Exhibit B**. The '654 patent is designated a continuation of the applications resulting in the '018 and '048 patents; bears a domestic filing date of September 30, 2014; and was duly and legally issued by the PTO on April 5, 2016. Mr. Bakhash is the sole inventor of the '654 patent.

18. SpaceTime3D is additionally the assignee of United States Patent No. 9,696,868 (the "'868 patent"), entitled "System and Method for Providing Three-Dimensional Graphical User Interface," a true and correct copy of which is attached as **Exhibit C**. The '868 patent is designated a continuation of the applications resulting in the '018, '048, and '654 patents; bears a domestic filing date of February 5, 2015; and was duly and legally issued by the PTO on July 4, 2017. Mr. Bakhash is the sole inventor of the '868 patent.

19. Collectively, the '048, '654, and '868 patents are referred to as the "patents-in-suit."

20. To the extent applicable, SpaceTime3D has complied with 35 U.S.C. § 287(a) with respect to the patents-in-suit.

21. The patents-in-suit, generally speaking, provide specific, non-conventional improvements to then-existing computer graphical user interfaces ("GUIs"), by providing an interactive computing interface and sorting interface comprising information from real-time and static sources, including but not limited to meta search results from the Web, information from application program interfaces, web services, search engines, application programs, networks, and

files on the end user's desktop. The claims of the patents-in-suit are directed to specific systems and methods for easily, efficiently, and intuitively interacting with and switching between applications operating on a computing device by switching back and forth between individual, active applications in a two-dimensional space and images of open applications in a three-dimensional space.

22. The claims of the patents-in-suit are particularly advantageous in ultra-mobile personal computer ("UMPC") devices having limited screen sizes, reduced processing power, and limited electrical (e.g., battery) power, by allowing a user to interact with a first, active application in a two-dimensional space (e.g., to acquire and/or modify the application-specific data presented to the user) and switching to a second, active application by (i) replacing the first application in two-dimensional space with images of a plurality of application in a three-dimensional space, (ii) allowing the user to select an image of the second application, and (iii) replacing the plurality of images in three-dimensional space with the second, active application in a two-dimensional space. By presenting the images in a "three-dimensional space," where each image was captured at a "time" when the corresponding, active application was last interacted with (hence "SpaceTime3D"), a user can easily, efficiently, and intuitively scroll through the plurality of images (e.g., arranged in chronological order) and select an image, and therefore an application, of interest. By switching between individual, active applications in a two-dimensional space and images of a plurality of applications in a three-dimensional space, which is a non-conventional technique that exploits the fact that images of applications can be more easily manipulated in a three-dimensional space than the active applications themselves, the claimed invention improves the functionality of the computing (e.g., UMPC) devices by requiring less power, minimal (or reduced) processing, and smaller screen sizes.

23. The patents-in-suit specifically identify problems with the conventional system of inputting information into a computer to achieve a given output, which involves a series of tedious steps—repetitive mouse clicks and keyboard inputs—to run applications and documents or navigate to certain information. ’868 Patent, col. 1:41-45. To switch to a different application or document on a computer, the user often has to close her current applications and documents, hide them or overlap them on a finite desktop by drawing them on top of each other, and then mine through folder within folder to find them again at a later date. Because the user’s desktop is finite, she must redo these same tasks over and over again. *Id.* at col. 1:45-51.

24. This conventional system wastes the end user’s time by (1) requiring many mouse clicks to open and close applications and/or documents, (2) requiring the user to remember the combinations of programs and documents she may need for a given purpose, and (3) requiring the user to create elaborate hierarchical folder systems to aid in the process of storing and recalling applications and/or documents. *Id.* at col. 1:52-56.

25. Further, the conventional operating system presents computer output, including applications and documents, in a two-dimensional visual display. *Id.* at col. 1:59-62. This output is usually confined within a window that is drawn on a finite-sized desktop—that is, the working area of a computer—with a fixed length and width. When the computer’s output exceeds the finite working graphical area, elements of the GUI (i.e. the windows) are typically drawn on top of each other such that the GUI components overlap on top of one another. *Id.* at col. 2:7-13.

26. The invention claimed in the patents-in-suit solves these known technological shortcomings in computers in a particular, non-conventional way: by providing an improved GUI that switches between individual, active applications in a two-dimensional space and images of a plurality of applications in a three-dimensional space. *Id.* at col. 2:53-56. More specifically, the

patents-in-suit recite a specific improvement over prior-art systems and methods by solving problems present in computers and especially UMPCs, which have relatively small displays, limited processing capabilities, and limited amounts of power. While such devices can run individual applications, they are not designed to run and update a display for multiple applications simultaneously because (1) the display is too small, and (2) there is insufficient processing power to operate and *update the display for* many active applications simultaneously, let alone to do so in three-dimensional space.

27. To solve these computer-based problems, the claimed invention teaches the system and method of opening applications in two-dimensional ("2D") space, switching from applications in 2D space to *images* of those applications in three-dimensional ("3D") space, manipulating the images in 3D space, and switching back and forth from the images in 3D space to the applications in 2D space.[11]

28. In order to increase space on a user's desktop, eliminate the need to constantly open and close programs or hide and reveal them each time the user needs them, and reduce the number of mouse clicks ('868 Patent, col. 37: 28-35)—improvements that are particularly useful on small-screen devices including UMPCs (*id.* at col. 38:19-26), the claimed invention allows users to switch from the traditional 2D view to a 3D view, where a plurality of images is displayed. These improved interfaces allow the end user to "toggle or switch between 2D and 3D for any selectively captured computing output and information (webpages, applications, documents, desktops or anything that can be visualized on a computer)." *Id.* at col. 22:25-30.

29. The claimed invention further discloses how, once in the 3D space, images of open applications are captured and manipulated as the user interacts with them. To this end, the

[11] The description of the claimed invention in this and proceeding paragraphs refers to applications, but is not limited to any particular application and includes other objects like webpages and documents.

specification provides that "[t]he memory module preferably comprises executable code for the processor to capture the computing output from at least one computer source in response to the received end user input and present the computing output as at least two objects within a three-dimensional virtual space displayed on the display screen," *id.* at col. 3:31-37; that "the subject matter of a simulated 3-D Cartesian space drawn within the two-dimensional display or Window of an end user's computer is preferably redrawn in a cyclical fashion . . . to refresh the scene such that changes to the objects drawn must happen quickly enough based on the responses of the end user such that the experience feels truly interactive," *id.* at col. 14:41-47; and that "[t]he program recalculates the shapes and sizes of objects or geometry in the scene/3D Cartesian space to reflect the location or visual perspective of the end user in the local coordinate system . . . [and] the program will redraw the scene in a cyclical fashion" "to achieve a realistic real-time experience," *id.* at col: 16-41-47; *see also id.* at Fig. 2 (showing how "user input" "recalculate[s] geometry in scene based on new viewpoint or perspective" and "redraw[s]" scene); Fig. 3 (describing the method of periodically capturing on screen the output of window for a program/information as a bitmap image; storing bitmap image in a frame buffer; mapping visual output of OS control, bitmap, or API on to arbitrary 3D geometry; and creating device input event handler in 3D); col. 3:42 (describing claimed invention's "chronological order" feature); col. 19:15-26 (describing claimed invention's ability to manipulate images based on the user's deletion of an image in 3D space).

30. The claimed invention further discloses how the user can select an image from the plurality of images displayed in 3D space, where the selected image is then reopened in 2D space, for instance, by "clicking button 398 [of Fig. 10], [which] binds the end user to a close-up viewpoint of the first page in the 3D stack," versus "clicking button 406 [of Fig. 10], [which] binds

the user to a close-up viewpoint of the last page in the stack," *id.* at col. 18:56-59; and by describing the "bind to HUD" technique, where an application that was selected in 3D space is brought into 2D space, *id.* col. 21:58-67, 22:1-22.

31. In sum, the patents-in-suit disclose improved user interfaces for electronic devices, particularly for those with small screens like UMPCs, by solving the computer-based problem of displaying only small active windows in two-dimensional spaces, which in turn limits the amount of content displayed. The patents-in-suit solve this problem by disclosing specific systems and methods that allow screens to display images in an immersive three-dimensional space, enabling users to see and navigate through unlimited amounts of content. The patents-in-suit thus deliver an improved user interface in a computer-related invention.

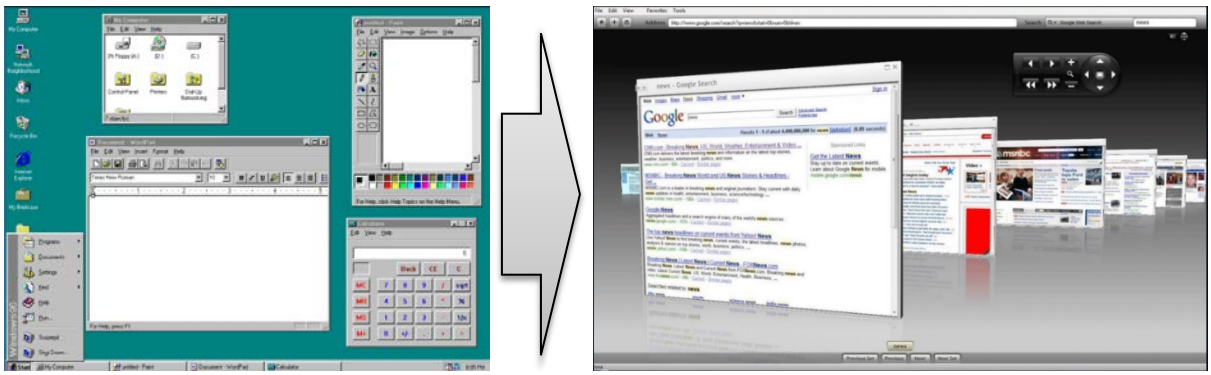

Fig. 3. Illustrations of pre-SpaceTime3D two-dimensional screen display (left) versus SpaceTime3D's three-dimensional screen display (right).

APPLE'S USE OF SPACETIME3D'S TECHNOLOGY

32. Apple is one of the world's leading manufacturers of UMPC products.

33. Apple makes, uses, offers to sell, sells, and/or imports into the United States products and/or systems that infringe the patents-in-suit.

34. As described below, Apple's infringement of the patents-in-suit was and continues to be willful and deliberate.

35. On March 29, 2007, SpaceTime3D published a patent application that matured into the ’018 patent, the parent patent of the patents-in-suit. Soon thereafter, SpaceTime3D released a public beta version of a browser using its published, patent-pending technology on June 4, 2007. Shortly following its debut, SpaceTime3D’s technology received favorable press coverage in numerous publications including but not limited to the *San Jose Mercury News*, *The Washington Post*, *The Wall Street Journal*, *The Economist*, *Popular Science*, *PC World*, *Tech Digest*, *TechNewsWorld*, *Renderosity*, and InternetNews.com.

36. For instance, on June 4, 2007, reporter Dean Takahashi of the *San Jose Mercury News* exclaimed that SpaceTime3D’s product “is the most advanced 3-D navigation system I’ve seen.”[12]

37. On June 8, 2007, reporter Jack Germain of TechNewsWorld wrote that SpaceTime3D’s “innovative three-dimensional search program” “deliver[ed] on its promise to save me time and provide a revolutionary online searching tool,”—“even in its pre-beta release form.”[13]

38. Mr. Germain further elaborated on the superiority of SpaceTime3D’s beta browser over other widely used web browsers already on the market:

> As cool as it is to search for products and text in 3-D, I was particularly impressed with SpaceTime’s tab browsing capabilities. It is much more than what is available with the tabbed browsing feature in Microsoft’s Internet Explorer 7.0 or in the open source Firefox browser.
>
> With SpaceTime, I have an unlimited 3-D space. This lets me map out my browsing progress in a visual time line, treating each Web site as an object that I can manipulate and rearrange within the 3-D environment.

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[12] Dean Takahashi, “Takahashi: Software allowing users to search web in 3-D still in infancy,” *The Mercury News* (June 4, 2007 4:23 A.M.), https://www.mercurynews.com/2007/06/04/takahashi-software-allowing-users-to-search-web-in-3-d-still-in-infancy/ (accessed Feb. 9, 2022).

[13] Jack Germain, “SpaceTime Browser Adds New Dimension to Search,” TechNewsWorld (June 8, 2007 5:00 A.M.), https://www.technewsworld.com/story/57733.html (accessed Feb. 9, 2022).

> SpaceTime also lets me alternate between 3-D and 2-D perspectives by double clicking on a 3-D display and then clicking the Return button. This process eliminates the hassle of reading and closing pop-up windows and clicking on the Back button. As much as I like the ability in Firefox to open a new tab when I click on a search link, viewing a stack of 10 related search objects in one flexible view leaves all the other two-dimensional browsers in the digital dust.

39. On information and belief, Apple had notice of SpaceTime3D's technology through the press coverage that it received.

40. Apple also had actual knowledge of the technology underlying the patents-in-suit as early as March 2008, when Mr. Bakhash shared that technology with an Apple executive, who then relayed to Mr. Bakhash that he had forwarded the information to various groups within Apple.

41. Also in March 2008, an account executive for Apple was aware of the *Wall Street Journal*'s coverage of the technology underlying the patents-in-suit.

42. Further, in or around May 2008, an NYU campus representative for Apple wrote to Mr. Bakhash that he was "blown away with how useful [the technology underlying the patents-in-suit] can be." The Apple campus representative observed that the SpaceTime3D technology was a "significant time saver" and asked Mr. Bakhash to "[p]lease keep [him] updated with SpaceTime news and [he'll] definitely spread the word."

43. In or around October 2008, an acquaintance of Mr. Bakhash shared with Steve Jobs the technology underlying the patents-in-suit, as well as feedback from early users of the SpaceTime3D search program urging Mr. Bakhash to create a Mac version of the program.

44. In addition to Mr. Bakhash's communications with the Apple employees and Apple campus representative, Apple also had actual knowledge of SpaceTime3D's patents from prosecuting its own patents. For example, dozens of Apple's patents cite to SpaceTime3D's Published Application No. US2007/0070066A1, which matured to become the parent patent to the patents-in-suit.

45. Notwithstanding its actual notice and/or actual knowledge of SpaceTime3D's patents, Apple has infringed and continues to infringe the patents-in-suit.

APPLE'S ACCUSED PRODUCTS

46. Apple's infringing products (the "Accused Products") include iPhones, iPod touches, iPads, and Apple Watches that were sold, offered for sale, made, used, or imported into the United States from at least 2016 to the present.

47. The graphical user interface of the Accused Products incorporates SpaceTime3D's patented technology. Apple exploited this technology without a license to use SpaceTime3D's patents-in-suit and continues to do so in its Accused Products to the present day.

48. The Accused Products include a graphical user interface that receives inputs from end users, captures computing output from at least one computer source in response to the received end-user input, and presents the computing output as at least two objects within a three-dimensional virtual space displayed to the end user.

49. As one example, the Accused Products are preloaded with the Safari browser, which Apple developed to run specifically on its devices.[14] Safari receives at least a first and second input from an end user through a capacitive touchscreen. For example, the end user can enter at least a first and second website address using the touchscreen, after which the Accused Products display at least two stacked tabs—each corresponding with an image of the entered website address—in three-dimensional space.

50. Safari receives additional interactions from the end user when the user clicks on one of the tabs displayed in the three-dimensional space. That interaction switches the displayed screen from the three-dimensional space to a two-dimensional space of the selected website.

[14] *See* Apple, *Safari*, https://www.apple.com/safari/ (accessed Feb. 9, 2022).

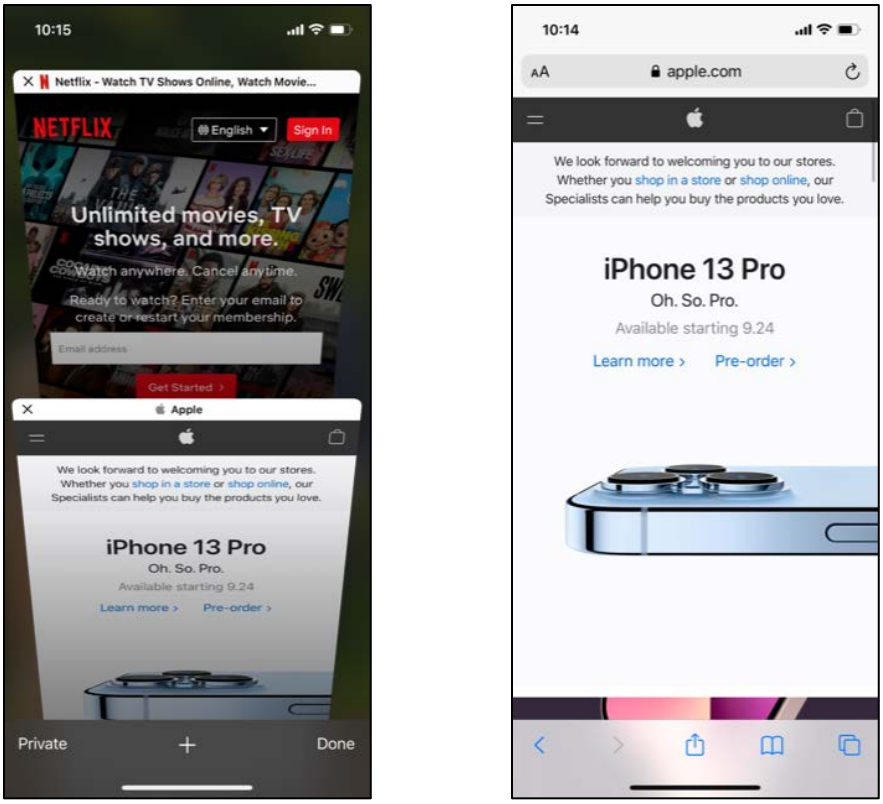

Fig. 4. Illustrations of a three-dimensional space displaying overlapping images of two websites (left) and a two-dimensional space displaying one active website (right) in the preloaded Safari browser on an iPhone.

51. The Accused Products infringe SpaceTime3D's patented technology also by displaying images of open applications in a three-dimensional space. End users can navigate and/or cycle through images of open applications and interact with one particular application by selecting the corresponding image on the touchscreen. That interaction replaces the images of all open applications in the three-dimensional space with the selected application in a two-dimensional space. The following figures (Figures 5-6) provide nonexhaustive illustrations of how iPhones and Apple Watches infringe the patents-in-suit.

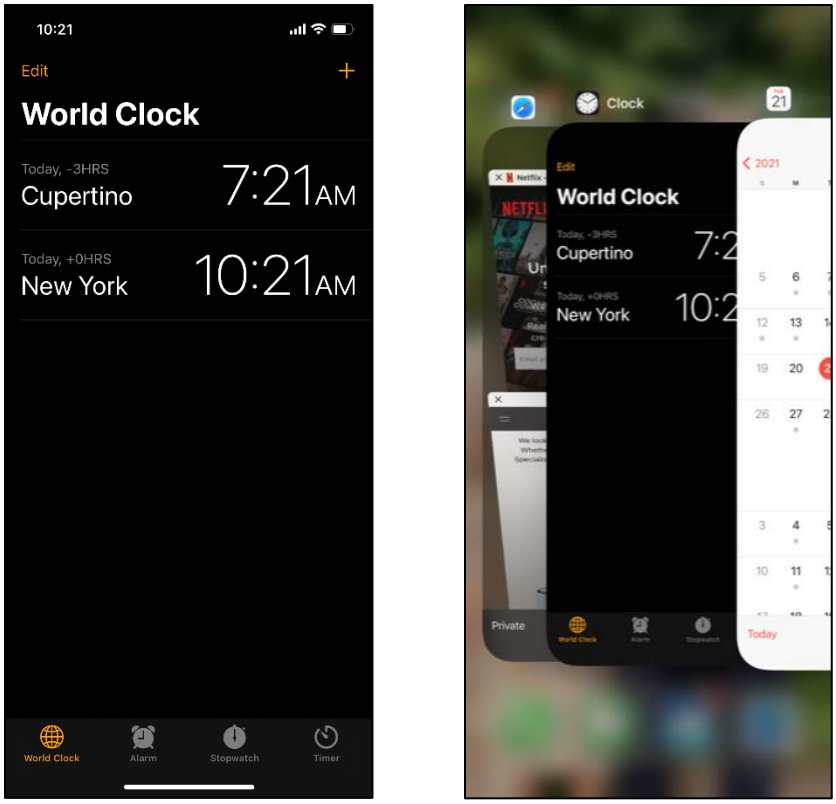

Fig. 5. Illustrations of a single active application (i.e. Clock) displayed in two-dimensional space (left) and images of three open applications (i.e. Safari, Clock, Calendar) displayed in three-dimensional space (right) on an iPhone.

Fig. 6. Illustration of images of multiple open applications (i.e. Workout, Settings, Activity) displayed in three-dimensional space on an Apple Watch.

52. In fact, Apple provides instructions on how users can use the three-dimensional viewer for both open webpages (in Safari) and open applications for the Accused Products. For instance, for the preloaded Safari browser, Apple's support website instructs iPhone users to tap on a certain icon to "look through the webpages you have open," as well as to organize the webpages that a user has open and "make them easier to return to later."

Use tabs in Safari on iPhone

In the Safari app , use tabs to help you navigate between multiple open webpages.

Browse open tabs

To look through the webpages you have open, tap , then do any of the following:

- *Close a tab:* Tap in the upper-right corner of the preview.
- *View a single tab again:* Tap a tab, or tap Done.

Fig. 7. Excerpts from Apple's iPhone User Guide on how to "use tabs in Safari on iPhone" to "help you navigate between multiple open webpages." *See* https://support.apple.com/guide/iphone/use-tabs-in-safari-iph3028ebf68/15.0/ios/15.0 (accessed Feb. 9, 2022).

53. The icon with which users can access these features looks nearly identical to the SpaceTime3D logo, which was widely disseminated in the positive press that SpaceTime3D received upon its launch.

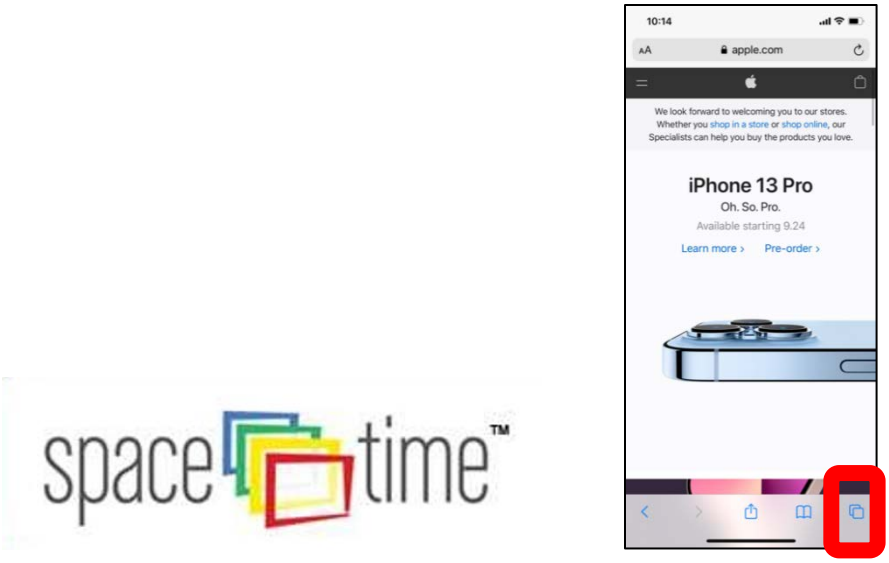

Fig. 8. SpaceTime3D's logo (left); Safari webpage-navigator icon for iOS 14 (right).

54. Likewise, on its support website, Apple instructs users of iPhones, iPads, and iPod touch how to "quickly switch from one app to another." On the iPhone X and iPad, users can switch between open apps by "swip[ing] up from the bottom to the middle of your screen and hold[ing] until you see the App Switcher." On the iPhone 8 or earlier models and iPads with a Home button, users can switch between apps by "double-click[ing] the Home button to see recently used apps." Apple instructs consumers on how to use these features, as shown in Figure 9.

Switch apps on your iPhone, iPad, or iPod touch

Learn how to quickly switch from one app to another. Then when you switch back, you can pick up right where you left off.

Switch apps on iPhone X and iPad

If you have an iPhone X or later, or an iPad:

1. Swipe up from the bottom to the middle of your screen and hold until you see the App Switcher.
2. Swipe left or right to find the app that you want to use.
3. Tap the app.

If you have a Smart Keyboard or Bluetooth keyboard paired to your iPad, press Command-Tab to switch between apps.

Fig. 9. Excerpt from Apple's support website, https://support.apple.com/en-us/HT202070 (accessed Feb. 9, 2022).

55. Apple similarly instructs users of the Apple Watch on how to use the Apple Watch Dock to open apps, as well as choose between recent apps, as shown in Figure 10.

Use the Dock on your Apple Watch

Open your favorite apps quickly, or switch from one app to another.

How to open an app from the Apple Watch Dock

1. Press the side button.
2. Swipe up or down, or turn the Digital Crown.
3. Tap an app to open it.
4. To close the Dock, press the side button.

Choose between Recents or Favorites

The Dock can show your most recent apps or up to 10 of your favorite apps. When you choose Recents, your apps appear in the order that you opened them. When you choose Favorites, you can choose the apps that appear, but your most recently used app still appears at the top of the Dock. If it's not already a favorite, you can tap Keep in Dock to add it.

Here's how to choose what appears:

1. Open the Watch app on your iPhone.
2. Tap the My Watch tab, then tap Dock.
3. Tap Recents or Favorites.

Fig. 10. Excerpts from Apple's support website, https://support.apple.com/en-us/HT206992.

COUNT I
INFRINGEMENT OF U.S. PATENT NO. 8,881,048

56. SpaceTime3D repeats and incorporates by reference each preceding paragraph as if fully set forth herein and further states:

57. Apple has infringed and continues to infringe the '048 patent directly and/or indirectly (by inducing infringement by others) by, *inter alia*, making, using, selling, importing, and/or offering for sale systems and/or methods that use a two-dimensional space to display and interact with a particular webpage and a three-dimensional space to visualize, manipulate,

navigate, and select among images of open webpages, in the manner recited in the claims of the ’048 patent.

58. In the alternative to literal infringement, Apple has infringed and continues to infringe the ’048 patent under the doctrine of equivalents.

59. For example, claim 8 is illustrative of the claims of the ’048 patent. It recites “[a] system for providing a three-dimensional (3D) graphical user interface, comprising: a display screen; an input device for receiving at least one input from an end user; a processor module operatively coupled to the display screen and the user input device; and a memory module operatively coupled to the processor module, the memory module comprising executable code for the processor module to; receive at least first and second inputs from an end user; receive first and second webpages from at least one source in response to said first and second inputs, wherein the first and second inputs are website address corresponding to said first and second webpages, respectively; display at least a portion of the first webpage on a first object within a 3D space on the display screen, and at least a portion of the second webpage on a second object within the 3D space on the display screen, comprising; rendering the first and second webpages; capturing first and second images of [] at least a portion of the first webpage and [] at least a portion of the second webpage, respectively; and texturing the first image on the first object and the second image on the second object, the first object being displayed in a foreground of the 3D space and the second object being displayed in a background of the 3D space; and display additional information, comprising: receiving an interaction by the end user on the first image; replacing the first and second objects within the 3D space with a window within a two-dimensional (2D) space on the display screen in response to receiving the interaction, wherein the window includes the rendered first webpage; receiving an interaction by the end user on a link provided in the rendered first

webpage, the link corresponding to the additional information; rendering the additional information; and displaying the rendered additional information on the display screen in said window within the 2D space on the display screen."

60. Apple's Accused Products practice every element of these claims.[15]

61. The Accused Products are a system for providing a three-dimensional (3D) graphical user interface.

62. The Accused Products comprise a display screen, as seen in the image below and as advertised by Apple on its website.

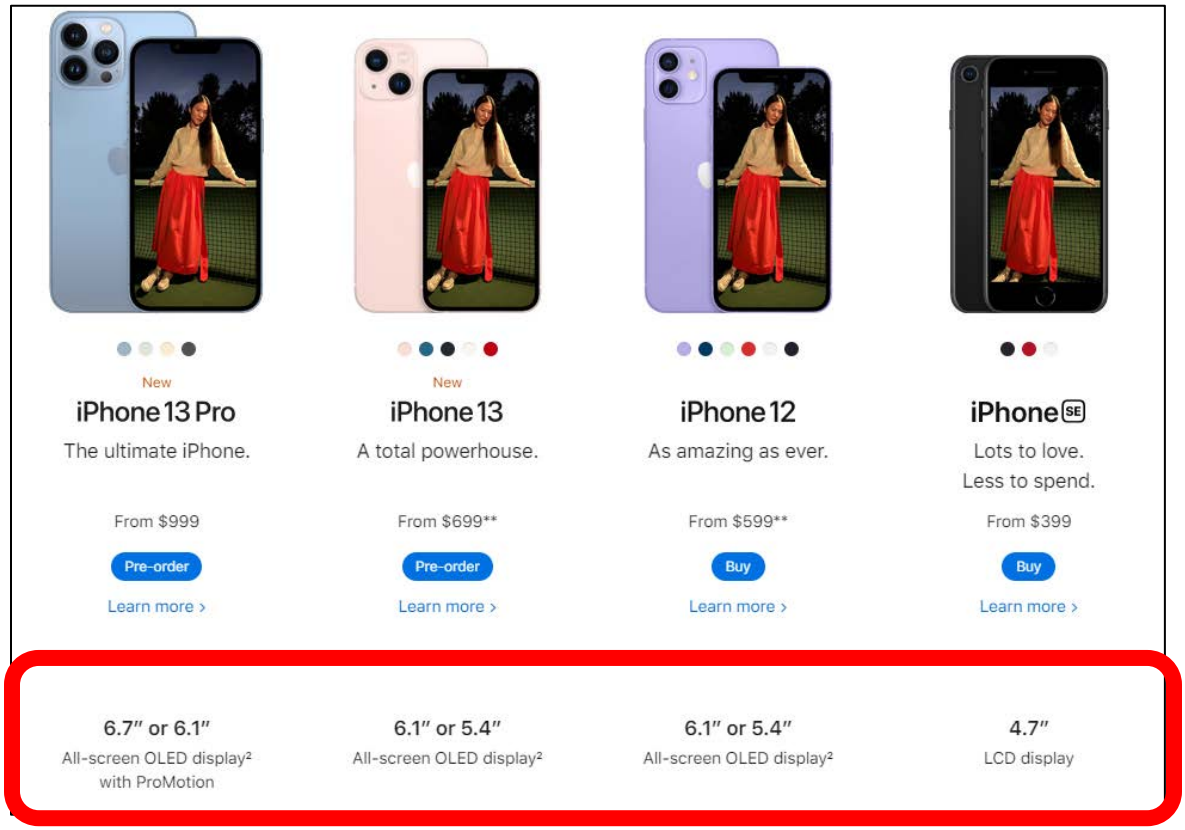

Fig. 11. Screenshot of https://www.apple.com/iphone/ (accessed Feb. 9, 2022).[16]

[15] This description of infringement is illustrative and not intended to be an exhaustive or limiting explanation of every manner in which Apple's Accused Products infringe.

[16] This and subsequent figures use an iPhone running iOS 14 as an exemplary infringing product. Upon information and belief, other accused models of Apple's iPhones, iPads, iPod touches, and Apple Watches similarly infringe.

63. The Accused Products' touchscreen allows multiple, simultaneous inputs to be entered by a user. Certain Accused Products—including but not limited to the iPhone 8 and earlier iPhone models as well as certain iPad models—also feature a Home button that allows inputs to be entered by a user.

64. The Accused Products comprise a processor module operatively coupled to the display screen and the user input device.

65. The Accused Products comprise a memory module operatively coupled to the processor module, the memory module comprising executable code for the processor module.

66. The memory module comprises executable code for the processor module to execute. For example, Accused Products are preloaded with at least the Safari browser application. In the below image, Safari can be seen loaded on an Accused Product. This application is located in the memory module of the Accused Product.

Fig. 12. Illustration of the preloaded Safari application on an iPhone.

67. The Accused Products receive at least a first and second input from an end user by way of the Home button and/or a capacitive touchscreen. The Accused Products' touchscreen allows multiple, simultaneous inputs to be entered by a user.

68. The Accused Products receive a first and second webpage from at least one server in response to the first and second inputs. The first and second inputs are website addresses corresponding to the first and second webpages. As stated above, the Safari browser provides a user interface capable of receiving first and second webpages from at least one server in response to user inputs requesting that said webpages are transmitted. The following description of infringement uses the Safari browser as its non-exhaustive example.

69. In the left image below, a user has entered "netflix.com" into Safari. The Accused Products received the netflix.com webpage in response to the input. In the right image below, the user has entered "apple.com" into Safari. The Accused Products received the apple.com webpage in response to the input.

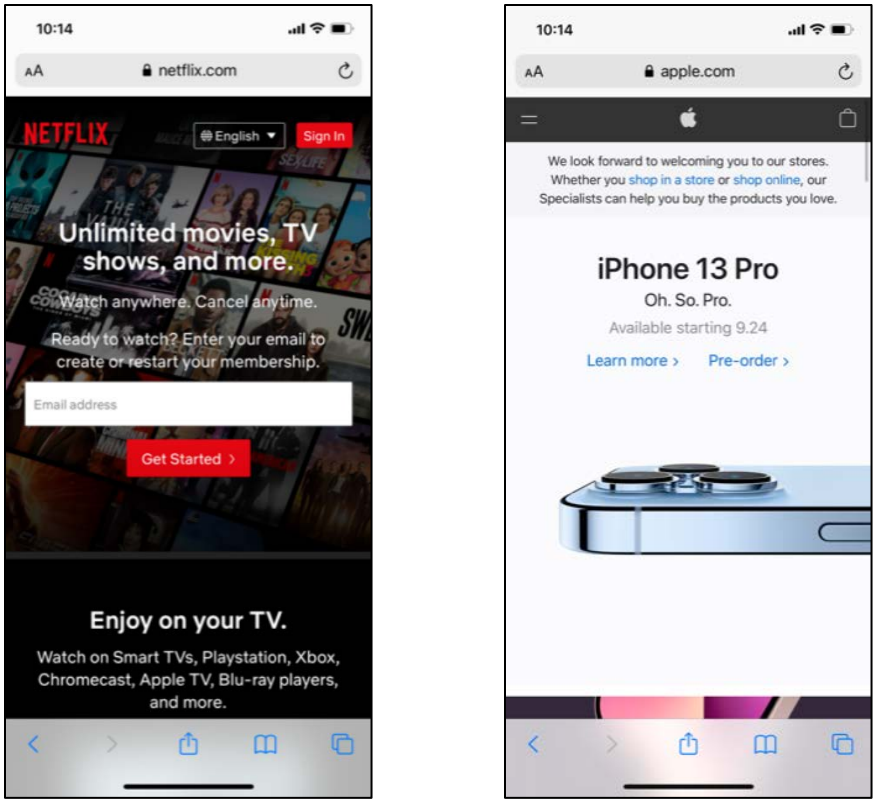

Fig. 13. Illustrations of a two-dimensional space displaying the netflix.com webpage (left) and the apple.com webpage (right) in Safari.

70. The Accused Products display at least a portion of a first webpage on a first object within a three-dimensional space and at least a portion of the second webpage on a second object within the three-dimensional space. For example, in the image below, multiple tabs in Safari can be seen on the screen. The screen displays a three-dimensional space, in which the tabs are stacked from deeper into the screen to more shallow on the screen. The second webpage (apple.com) can be seen on the foremost tab; behind that tab, a portion of the first webpage (netflix.com) can be seen.

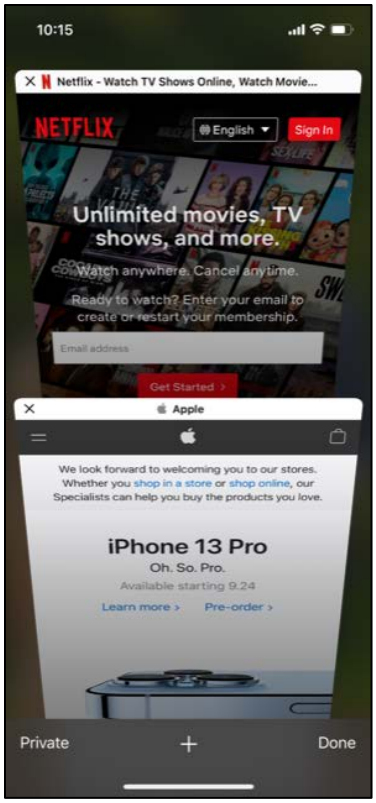

Fig. 14. Illustration of a three-dimensional space displaying a portion of a first webpage (netflix.com) and a second webpage (apple.com) in Safari.

71. The Safari browser on Accused Products renders the first and second webpages.

72. The Accused Products capture first and second images of at least a portion of the first webpage and at least a portion of the second webpage, respectively. In Figure 14 above, the iPhone generated a first image of a portion of a first webpage (netflix.com) in Safari.

73. The Accused Products texture the first image on the first object and the second image on the second object, the first object being displayed in a foreground of the 3D space and the second image being displayed in a background of the 3D space. In Figure 14, the apple.com webpage is on the foremost tab; behind that tab, a portion of the netflix.com webpage can be seen.

74. The Accused Products display additional information, including at least links to additional webpages. The Accused Products receive an interaction by the end user on the first

image. For example, when the user clicks on one of the tabs corresponding with an image of a webpage for an entered URL, the clicked tab is displayed and becomes the active browser tab.

75. The Accused Products replace the first and second images within the three-dimensional space with a window within a two-dimensional space in response to receiving the interaction, wherein the window includes the selected webpage. In the first image below, for instance, the user can see the three-dimensional tab view. If the user selects one of the tabs, the user is brought to a two-dimensional space in response, wherein the window includes the rendered webpage associated with the selected tab.

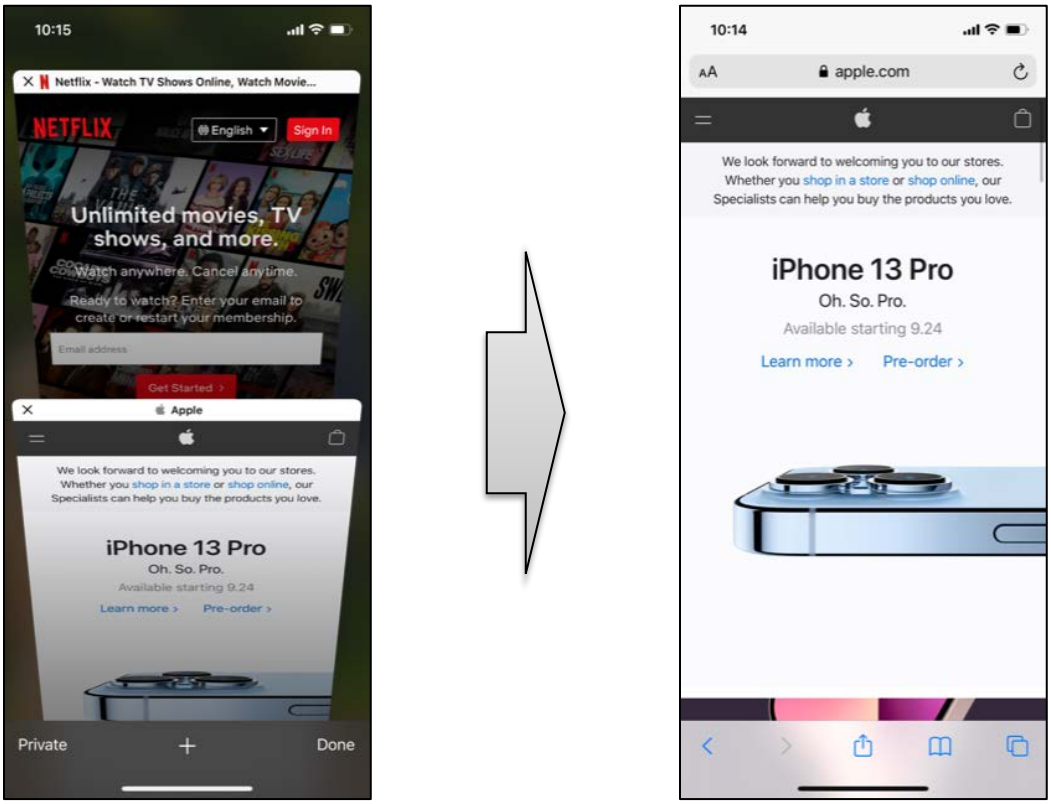

Fig. 15. Illustrations of a three-dimensional space displaying images of two webpages (left) and a two-dimensional space displaying the user-selected webpage (apple.com) in Safari (right).

76. The Accused Products can also receive an interaction by the end user on a link provided in the rendered first webpage, the link corresponding to additional information. In the image below, the text “Learn More” is an HTML link corresponding to additional information.

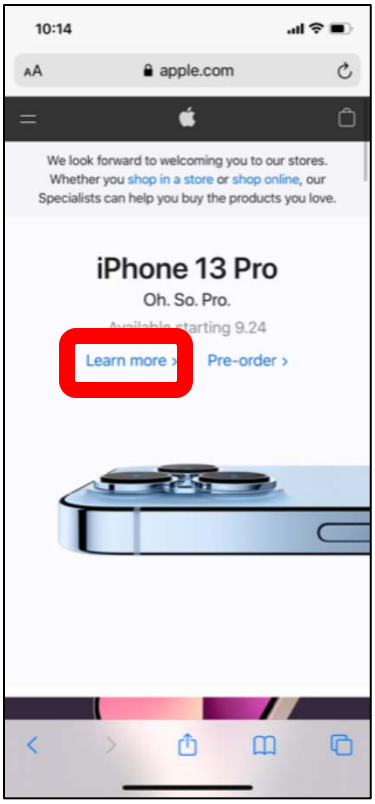

Fig. 16. Illustration of a webpage (apple.com), with at least one link corresponding to additional information, in Safari.

77. The Accused Products render the "additional information," that is, the linked-to page interacted with by the user. The Accused Products display the rendered additional information on the display screen in said window within the two-dimensional space on the display screen. For example, in the image below, a user has tapped the "Learn More" link in Figure 16. Safari, in response, renders the webpage at the linked address and displays it to the user.

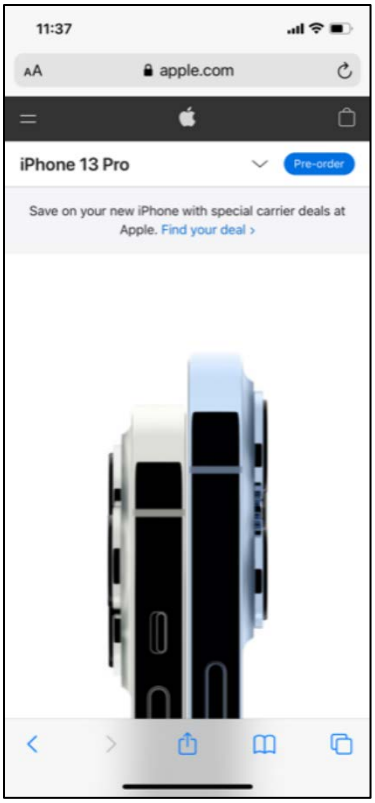

Fig. 17. Illustration of additional information rendered in Safari after a user has tapped the "Learn More" link as displayed in Figure 16 above.

78. Apple's infringement of at least Claim 8 of the '048 patent is ongoing.

79. Where acts constituting direct infringement of the '048 patent are not performed by Apple, such acts are performed by Apple's customers and/or end users, who act at the direction and/or control of Apple, with Apple's knowledge. Apple took active steps, directly and/or through contractual relationships with others, with the specific intent to cause them to use the Accused Products in a manner that infringes claims of the '048 patent. Such steps by Apple include but is not limited to advising and directing customers and/or end users to use the Accused Products in an infringing manner; advertising and promoting the use of the Accused Products in an infringing manner; and/or distributing instructions that guide end users to use the Accused Products in an infringing manner. Apple performs these steps, which constitute induced infringement, with knowledge of the patents-in-suit and with the knowledge that the induced acts constitute

infringement. Apple is aware that the normal and customary use of the Accused Products by its customers and/or end users would infringe the patents-in-suit. Apple's induced infringement is ongoing.

80. Apple's acts of infringement have caused damage to SpaceTime3D, and SpaceTime3D is entitled to recover from Apple the damages it sustained as a result of Apple's wrongful acts in an amount subject to proof at trial.

COUNT II
INFRINGEMENT OF U.S. PATENT NO. 9,304,654

81. SpaceTime3D repeats and incorporates by reference each preceding paragraph as if fully set forth herein and further states:

82. Apple has infringed and continues to infringe the '654 patent directly and/or indirectly (by inducing infringement by others) by, *inter alia*, making, using, selling, importing, and/or offering for sale systems and/or methods that use a two-dimensional space to display and interact with a particular application and a three-dimensional space to visualize, manipulate, navigate, and select among images of open applications, in the manner recited in the claims of the '654 patent.

83. In the alternative to literal infringement, Apple has infringed and continues to infringe the '654 patent under the doctrine of equivalents.

84. For example, claim 10 is illustrative of the claims of the '654 patent. It recites "[a] system for displaying a timeline associated with a plurality of applications and allowing a user to modify an output of one of said plurality of applications by interacting with said information, comprising: a display device; at least one input device; at least one processor operatively coupled to said display device and said at least one input device; and a memory device comprising executable code for: receiving a plurality of inputs from said at least one input device, said plurality

of inputs comprising at least first, second, and third inputs; opening said plurality of applications in response to said plurality of inputs, said plurality of applications comprising at least first, second, and third applications, wherein each one of said plurality of applications is configured to (i) generate an output having application-specific data, (ii) display said output on a display device, and (iii) allow said user to modify at least a portion of said application-specific data by interacting with said output; and displaying on said display device said timeline associated with said plurality of applications, comprising; generating a plurality of images, said plurality of images comprising at least first, second, and third images, wherein said first image is an image of at least a portion of an output generated by said first application and having first application-specific data, said second image is an image of at least a portion of an output generated by said second application and having second application-specific data, and said third image is an image of at least a portion of an output generated by said third application and having third application-specific data; and displaying said plurality of images within a three-dimensional space on said display device in an order based on a last time that said at least one processor received (i) said first input and a last interaction with said first object, (ii) said second input and a last interaction with said second object, and (iii) said third input and a last interaction with said third object, such that a first one in said order is displayed in a foreground of said three-dimensional space, and second and third ones in said order are displayed in a background of said three-dimensional space; and allowing said user to modify at least a portion of one of said first, second, and third application-specific data, comprising: receiving a fourth input from said at least one input device, said fourth input interacting with one of said plurality of images corresponding to one of said plurality of applications; replacing said plurality of images within said three-dimensional space with one of said first, second, and third objects corresponding to said one of said plurality of applications within a two-dimensional space in response to said fourth

input; receiving a fifth input from said at least one input device, said fifth input interacting with said one of said first, second, and third objects within said two-dimensional space; and modifying said one of said first, second, and third application-specific data in response to said fifth input."

85. Apple's Accused Products practice every element of these claims.[17]

86. The Accused Products provide a system for displaying a timeline associated with a plurality of applications and allowing a user to modify an output of one of said plurality of applications by interacting with said timeline as described below.

87. The Accused Products comprise a display screen, as seen in the image below and as advertised by Apple on its website.

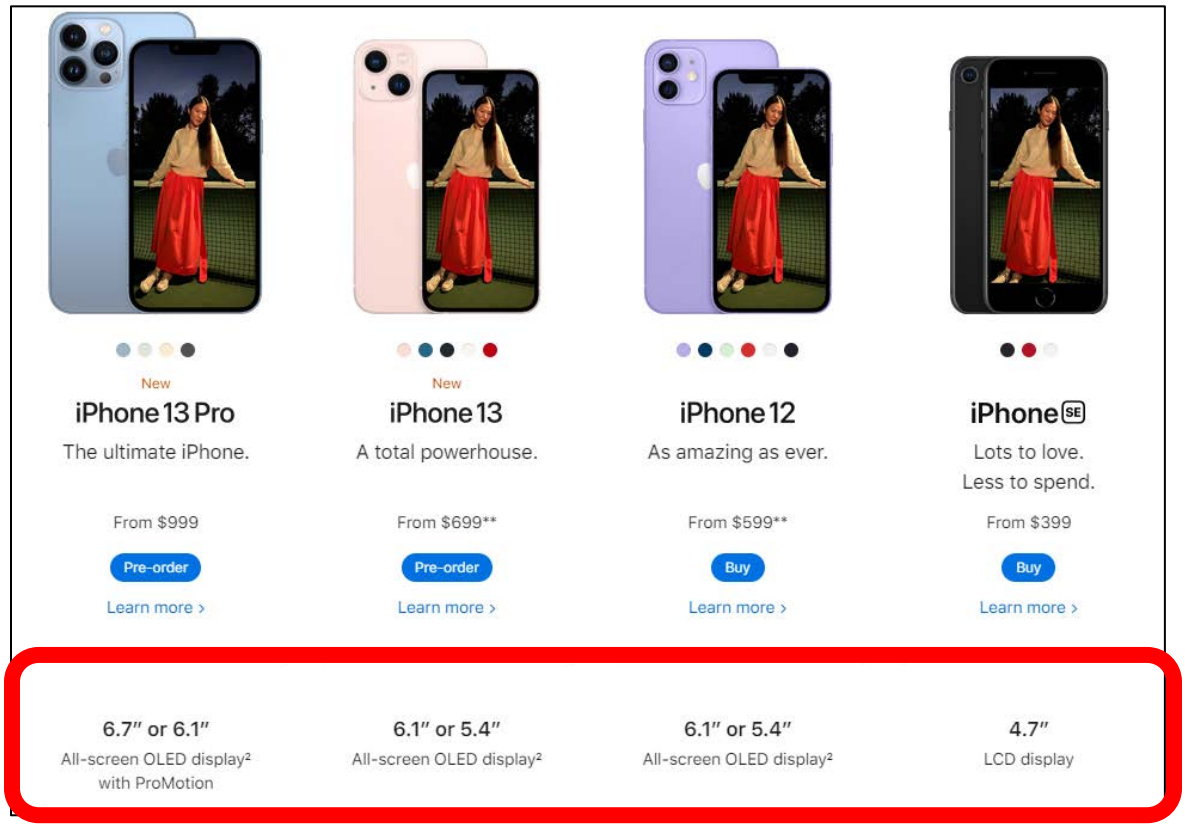

Fig. 18. Screenshot of https://www.apple.com/iphone/ (accessed Feb. 9, 2022).

[17] This description of infringement is illustrative and not intended to be an exhaustive or limiting explanation of every manner in which Apple's products infringe.

88. The Accused Products comprise at least one input device. The Accused Products' touchscreen allows multiple, simultaneous inputs to be entered by a user. Certain Accused Products—including but not limited to iPhone 8 and earlier iPhone models as well as certain iPad models—also feature a Home button that allows inputs to be entered by a user.

89. The Accused Products comprise a processor module operatively coupled to the display screen and the user input device.

90. The Accused Products comprise a memory module operatively coupled to the processor module, the memory module comprising executable code for the processor module.

91. The memory module comprises executable code for the processor module to execute. For example, the Accused Products are preloaded with at least the Safari browser application. In the below image, Safari can be seen loaded on an Accused Product. This application is located in the memory module of the Accused Product.

Fig. 19. Illustration of the preloaded Safari application on an iPhone.

92. The Accused Products receive at least a first and second input from an end user by way of the Home button and/or a capacitive touchscreen. The Accused Products' touchscreen allows multiple, simultaneous inputs to be entered by a user.

93. The Accused Products open a plurality of applications in response to the plurality of inputs. The plurality of applications comprises at least first, second, and third applications. The Accused Products can open at least a first, second, and third application—in response to the user's inputs. For example, in the left image below, an Accused Product has opened the Safari application. In the middle image below, an Accused Product has opened the Clock application. In the right image below, an Accused Product has opened the Calendar application.

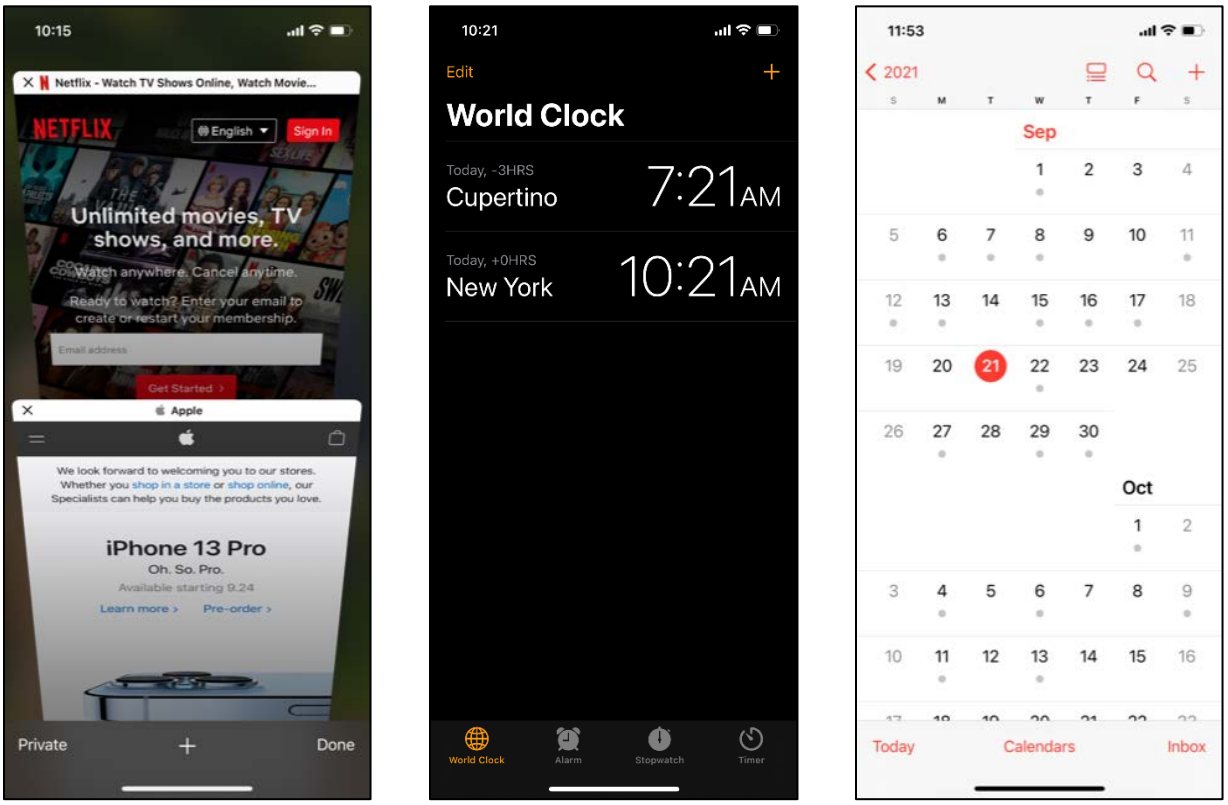

Fig. 20. Illustrations of the Safari application (left), Clock application (middle), and Calendar application (right) displayed in two-dimensional space on an iPhone.

94. The Accused Products' applications that are opened are configured to (i) generate an object having application-specific data, (ii) display that object on said display device, and

(iii) allow the user to modify at least a portion of said application-specific data by interacting with the object.

95. The applications are each configured to generate an object with application-specific data. This "object" is an instance of the application that runs in the memory of Accused Products. Further, the Accused Products display the object on its display and allow the user to modify at least a portion of the application-specific data by interacting with the object. The Calendar application, for instance, allows users to interact with application-specific data by clicking on dates and entering appointments. In the figure below, the Calendar application displays a different month—compared to the right image of Figure 20 above—after user interaction.

Fig. 21. Illustration of the Calendar application displaying a different month (from the right image of Figure 20) after user interaction.

96. The existence of these objects can be seen in the image below, which shows each instance of the Safari, Clock, and Calendar applications running in the memory of an Accused Product.

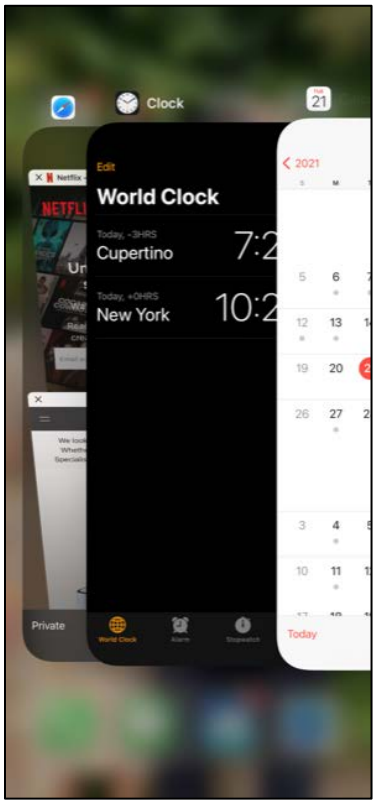

Fig. 22. Illustration of a three-dimensional space displaying images of the Safari, Clock, and Calendar applications on an iPhone.

97. The Accused Products display the timeline associated with the plurality of applications as discussed in the next several paragraphs.

98. The Accused Products generate a plurality of images comprising at least first, second, and third images. The first image is an image of at least a portion of a first object generated by the first application and having first application-specific data. For example, in the left illustration of Figure 20 above, an Accused Product generated an image of the Safari application, including its application-specific data. The second image is an image of at least a portion of a second object generated by the second application and having second application-specific data.

For example, in the middle illustration of Figure 20 above, an Accused Product generated an image of the Clock application, including its application-specific data. Finally, the third image is an image of at least a portion of a third object generated by the third application and having third application-specific data. In the right illustration of Figure 20 above, an Accused Product generated an image of the Calendar app, including its application-specific data like dates and appointments that the user can modify.

99. The Accused Products display the plurality of images within a three-dimensional space on the display device in an order based on a last time that at least one processor received (i) the first input and a last interaction with the first object, (ii) the second input and a last interaction with a second object, and (iii) a third input and a last interaction with a third object, such that a first one in said order is displayed in a foreground, a second displayed in a background behind at least the first one in the foreground, and a third displayed in a background behind at least the second one. Figure 22 above is illustrative.

100. The Accused Products further allow users to modify a portion of the first, second, and third application-specific data by receiving a fourth input from at least one input device, with the fourth input interacting with one of the plurality of images corresponding to one of the plurality of applications. For example, the Accused Products can receive an interaction from a user as in the below image (Figure 23), such as by tapping on the Calendar application.

101. After receiving a user interaction, the Accused Products replace the plurality of images within the three-dimensional space, with one of the first, second, or third object corresponding to one of the plurality of applications within a two-dimensional space in response to the fourth input. For example, if the user taps the image of the Calendar application, the Accused

Products will “maximize” and activate the Calendar application in a two-dimensional space, which replaces the three-dimensional space containing the plurality of images.

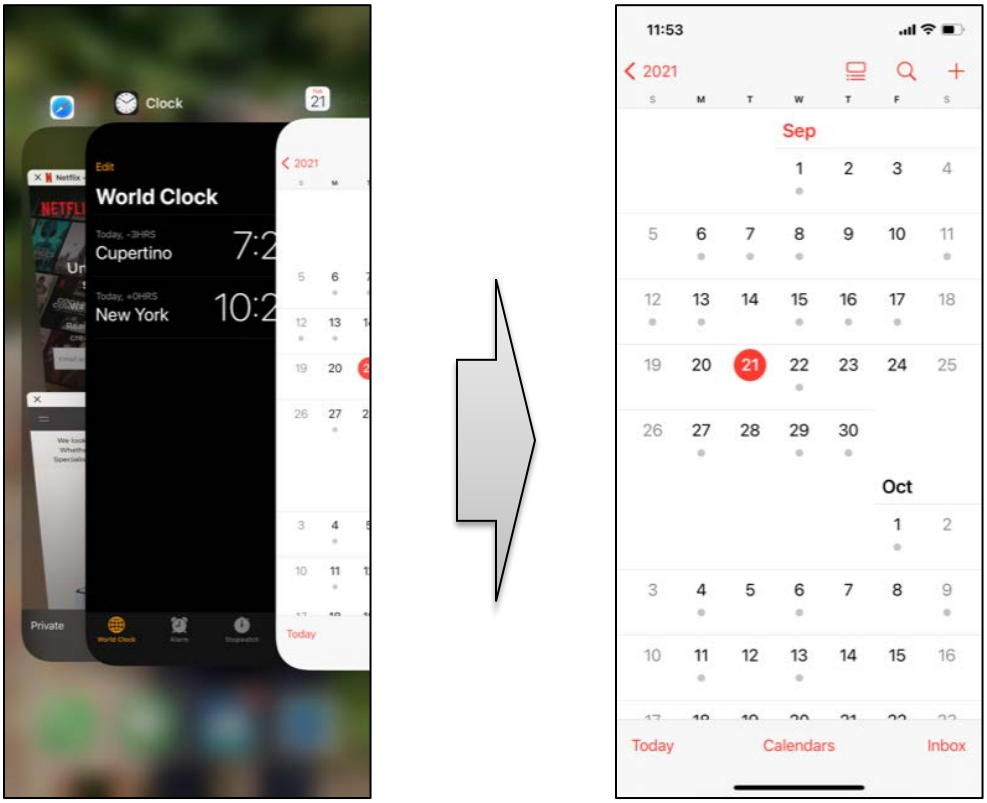

Fig. 23. Illustrations of a three-dimensional space displaying images of three open applications (left) and a two-dimensional space displaying the Calendar application in response to user input (right).

102. Further, the Accused Products can receive a fifth input from at least one input device, with the fifth input interacting with one of the first, second, and third objects in the two-dimensional space. For example, as described above, the user can interact with the Calendar application, resulting in the Calendar application showing a different month.

103. The Accused Products modify one of the first, second, and third application-specific data in response to the fifth input. For example, as described above, upon the user’s interaction with the Calendar application, the Calendar application shows a different month.

104. Apple’s infringement of at least Claim 10 of the ’654 patent is ongoing.

105. Further, Apple's infringement as described in Count I above is equally applicable to Apple's infringement of the '654 patent.

106. Where acts constituting direct infringement of the '654 patent are not performed by Apple, such acts are performed by Apple's customers and/or end users, who act at the direction and/or control of Apple, with Apple's knowledge. Apple took active steps, directly and/or through contractual relationships with others, with the specific intent to cause them to use the Accused Products in a manner that infringes claims of the '654 patent. Such steps by Apple include but is not limited to advising and directing customers and/or end users to use the Accused Products in an infringing manner; advertising and promoting the use of the Accused Products in an infringing manner; and/or distributing instructions that guide end users to use the Accused Products in an infringing manner. Apple performs these steps, which constitute induced infringement, with knowledge of the patents-in-suit and with the knowledge that the induced acts constitute infringement. Apple is aware that the normal and customary use of the Accused Products by their customers and/or end users would infringe the patents-in-suit. Apple's induced infringement is ongoing.

107. Apple's acts of infringement have caused damage to SpaceTime3D, and SpaceTime3D is entitled to recover from Apple the damages it sustained as a result of Apple's wrongful acts in an amount subject to proof at trial.

COUNT III
INFRINGEMENT OF U.S. PATENT NO. 9,696,868

108. SpaceTime3D repeats and incorporates by reference each preceding paragraph as if fully set forth herein and further states:

109. Apple has infringed and continues to infringe the '868 patent directly and/or indirectly (by inducing infringement by others) by, *inter alia*, making, using, selling, importing,

and/or offering for sale systems and/or methods that use a two-dimensional space to display and interact with a particular application and a three-dimensional space to visualize, manipulate, navigate, and select between images of open applications, in the manner recited in the claims of the ’868 patent.

110. In the alternative to literal infringement, Apple has infringed and continues to infringe the ’868 patent under the doctrine of equivalents.

111. For example, claim 10 is illustrative of the claims of the ’868 patent. It recites “[a] system for using a two-dimensional (2D) space to selectively interact with at least one of a plurality of applications open on a device and a three-dimensional (3D) space to switch between said plurality of applications, comprising: a display device; at least one input device; at least one processor operatively coupled to said display device and said at least one input device; and a memory device comprising executable code for: receiving a plurality of inputs from a user, said plurality of inputs comprising at least first, second, and third inputs; opening said plurality of applications in response to said plurality of inputs, said plurality of applications comprising at least first, second, and third applications, wherein for each one of said plurality of applications (i) an object is generated having application-specific data, (ii) said object is displayed in said 2D space on said fixed resolution display, and (iii) said user is allowed to modify at least a portion of said application-specific data by interacting with said object; allowing a user to switch between said plurality of application, comprising: generating at least a plurality of images, said plurality of images comprising at least first, second, and third images, wherein said first image is an image of at least a portion of a first object generated by said first application and having first application-specific data, said second image is an image of at least a portion of a second object generated by said second application and having second application-specific data, and said third image is an

image of at least a portion of a third object generated by said third application and having third application-specific data; replacing said object corresponding to one of said plurality of applications that is being interacted with by said user in said 2D space with said plurality of images, said plurality of images being displayed in said 3D space and in an order based on a last time that said user one of (i) opened said first application and interacted with said first object; (ii) opened said second application and interacted with said second object, and (iii) opened said third application and interacted with said third object, wherein a first one in said order is displayed a foreground of said 3D space, a second one in said order is displayed in a background of said 3D space behind at least said first one in said order, and a third one in said order is displayed in said background of said 3D space behind at least said second one in said order; allowing said user to move said plurality of images, wherein (i) movement of one of said plurality of images results in movement of all of said plurality of images, and (ii) continued movement in one direction of one of said plurality of images results in a perception to said user that said one of said plurality of images is moved off of said fixed resolution display; and allowing said user to delete at least one of said plurality of images from said 3D space, wherein deletion of said second one in said order results in said third one in said order being moved to a location in said 3D space where said second one in said order was located prior to said deletion; and allowing said user to interact with one of said first, second, and third applications, comprising: receiving a selection from said user of one of said plurality of images corresponding to one of said plurality of applications; replacing said plurality of images within said 3D space with one of said first, second, and third objects corresponding to said one of said plurality of applications within said 2D space in response to said selection; receiving at least one interaction by said user with said one of said first, second, and

third objects within said 2D space; and modifying said one or said first, second, and third application-specific data in response to said at least one interaction."

112. Apple's Accused Products practice every element of these claims.[18]

113. The Accused Products provide a system for using a two-dimensional space to selectively interact with at least one of a plurality of applications open on a computing device and a three-dimensional space to switch between the plurality of applications, as described below.

114. The Accused Products comprise a display screen, as seen in the image below and as advertised by Apple on its website.

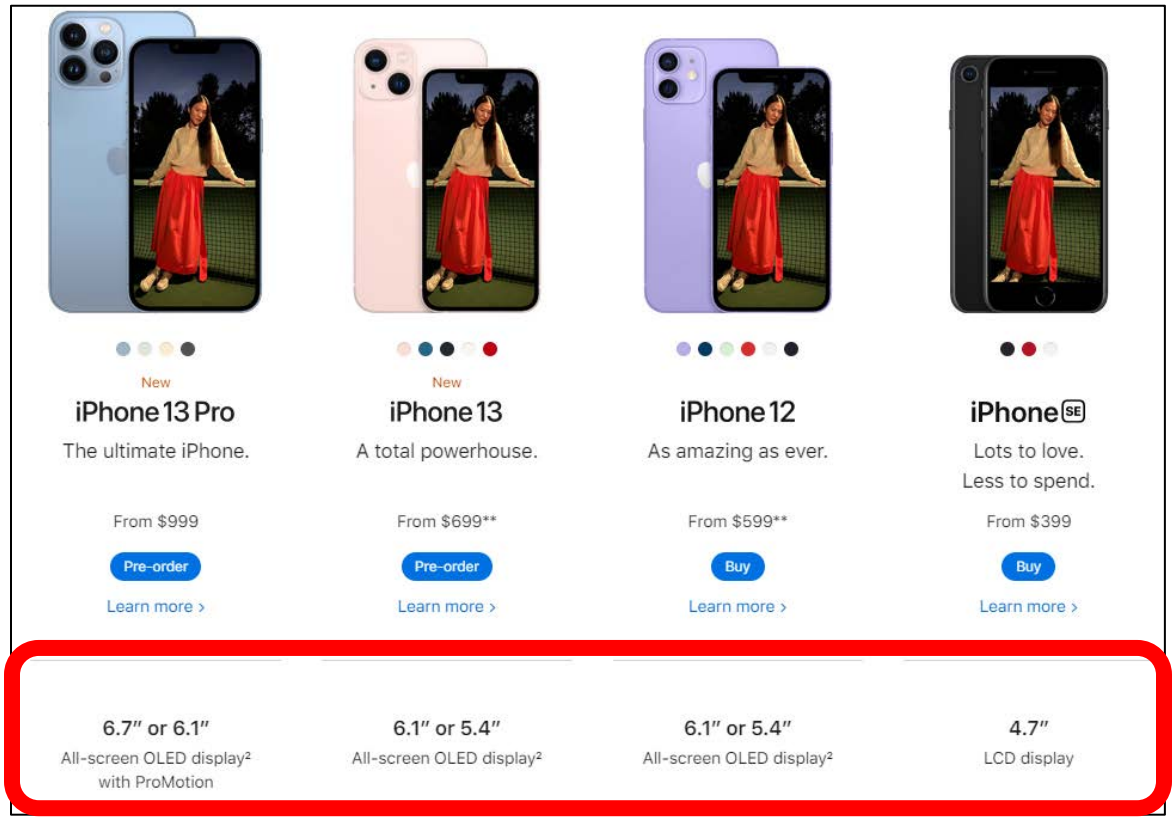

Fig. 24. Screenshot of https://www.apple.com/iphone/ (accessed Feb. 9, 2022).

[18] This description of infringement is illustrative and not intended to be an exhaustive or limiting explanation of every manner in which Apple's products infringe.

115. The Accused Products comprise at least one input device. The Accused Products' touchscreen allows multiple, simultaneous inputs to be entered by a user. Certain Accused Products—including but not limited to iPhone 8 and earlier iPhone models as well as certain iPad models—also feature a Home button that allows inputs to be entered by a user.

116. The Accused Products comprise a processor module operatively coupled to the display screen and the user input device.

117. The Accused Products comprise a memory module operatively coupled to the processor module, the memory module comprising executable code for the processor module.

118. The memory module comprises executable code for the processor module to execute. For example, the Accused Products are preloaded with at least the Safari browser application. In the below image, Safari can be seen loaded on an Accused Product. This application is located in the memory module of the Accused Products.

Fig. 25. Illustration of the preloaded Safari application on an iPhone.

119. The Accused Products receive a plurality of inputs from a user—comprising at least first, second, and third inputs—through the Home button and/or a capacitive touchscreen. The Accused Products' touchscreen allows multiple, simultaneous inputs to be entered by a user.

120. The Accused Products can open at least a first, second, and third application in response to the user's inputs. For example, in the left image below, an Accused Product has opened the Safari application. In the middle image below, an Accused Product has opened the Clock application. In the right image below, an Accused Product has opened the Calendar application.

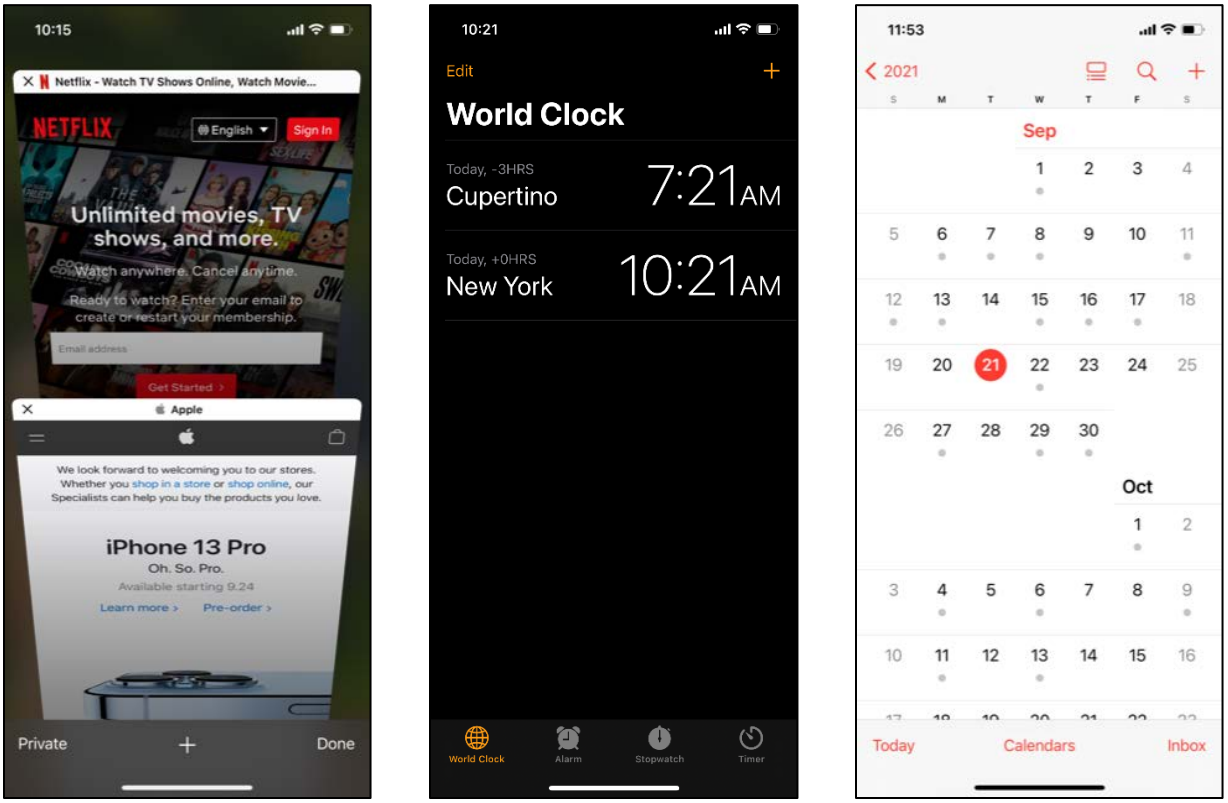

Fig. 26. Illustrations of the Safari application (left), Clock application (middle), and Calendar application (right) displayed in two-dimensional space on an iPhone.

121. The applications are each configured to generate an object with application-specific data. This "object" is an instance of the application that runs in the memory of the Accused Products. Further, the Accused Products display the object on its display and allow the user to modify at least a portion of the application-specific data by interacting with the object. The

Calendar application, for instance, allows users to interact with application-specific data by clicking on dates and entering appointments. In the image below, the Calendar application displays a different month—compared to the right image of Figure 26 above—after user interaction.

Fig. 27. Illustration of the Calendar application displaying a different month (from the right image of Figure 26) after user interaction.

122. The existence of these objects can be seen in the image below, which shows each instance of the Safari, Clock, and Calendar applications running in the memory of the Accused Products.

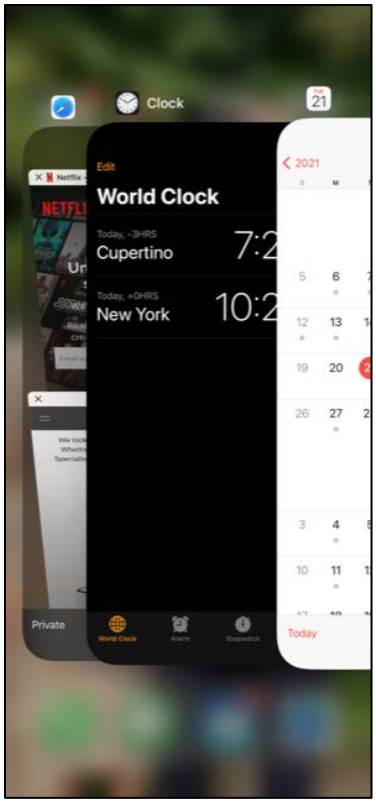

Fig. 28. Illustration of a three-dimensional space displaying images of the Safari, Clock, and Calendar applications on an iPhone.

123. The Accused Products display on its screen information on the plurality of applications.

124. The Accused Products generate a plurality of images comprising at least first, second, and third images. The first image is an image of at least a portion of a first object generated by the first application and having first application-specific data. For example, in the left illustration of Figure 26 above, an Accused Product generated an image of the Safari application, including its application-specific data. The second image is an image of at least a portion of a second object generated by the second application and having second application-specific data. For example, in the middle illustration of Figure 26 above, an Accused Product generated an image of the Clock application, including its application-specific data. Finally, the third image is an image of at least a portion of a third object generated by the third application and having third application-

specific data. In the right illustration of Figure 26 above, an Accused Product generated an image of the Calendar app, including its application-specific data like dates and appointments that the user can modify.

125. The Accused Products display the plurality of images within a three-dimensional space on the display device, with the first application displayed in a foreground, a second displayed in a background behind at least the first one in the foreground, and a third displayed in a background behind at least the second one. Figure 28 above is illustrative.

126. The Accused Products further allow users to modify a portion of the first, second, and third application-specific data by receiving a first interaction from the user with one of the plurality of images corresponding to one of the plurality of applications. For example, the Accused Products can receive an interaction from a user as in the below image (Figure 29), such as by tapping on the Calendar application.

127. After receiving a user interaction, the Accused Products replace the plurality of images within the three-dimensional space, with one of the first, second, or third objects corresponding to one of the plurality of applications within a two-dimensional space. For example, if the user taps the image of the Calendar application, the Accused Products will “maximize” and activate the Calendar application in a two-dimensional space, which replaces the three-dimensional space with the plurality of images.

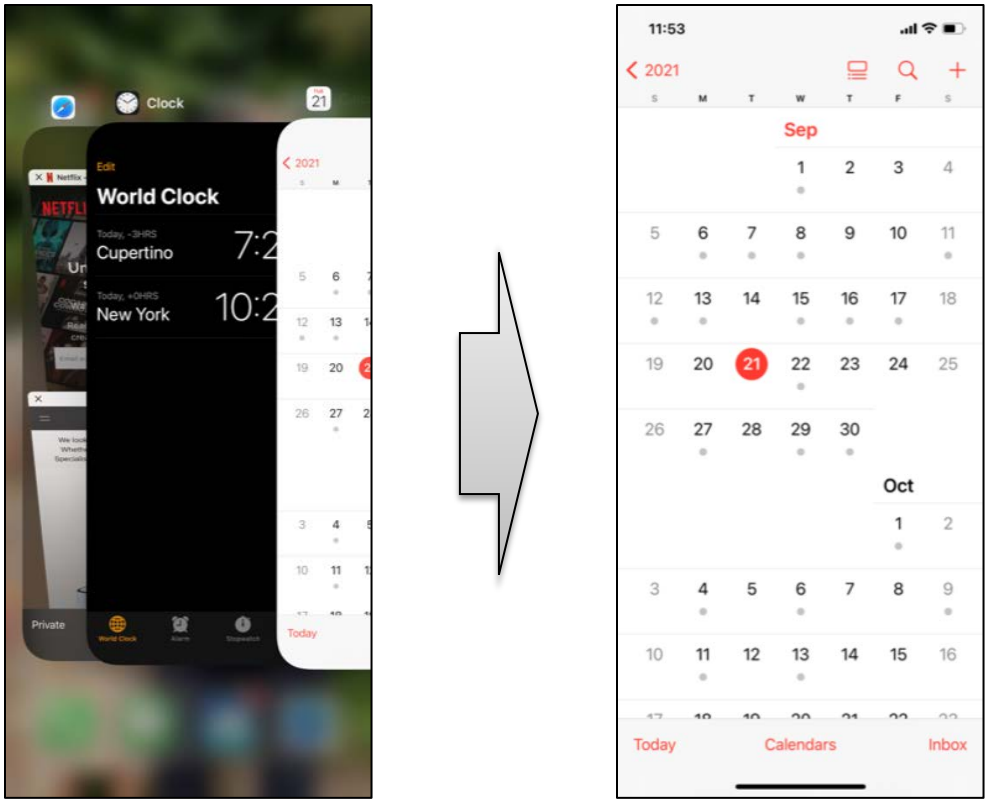

Fig. 29. Illustrations of a three-dimensional space displaying images of three open applications (left) and a two-dimensional space displaying the Calendar application in response to user input (right).

128. The Accused Products allow the user to move the plurality of images. For example, in the left illustration of Figure 30 below, when a user moves the Calendar application image to the right, the subsequent images will follow.

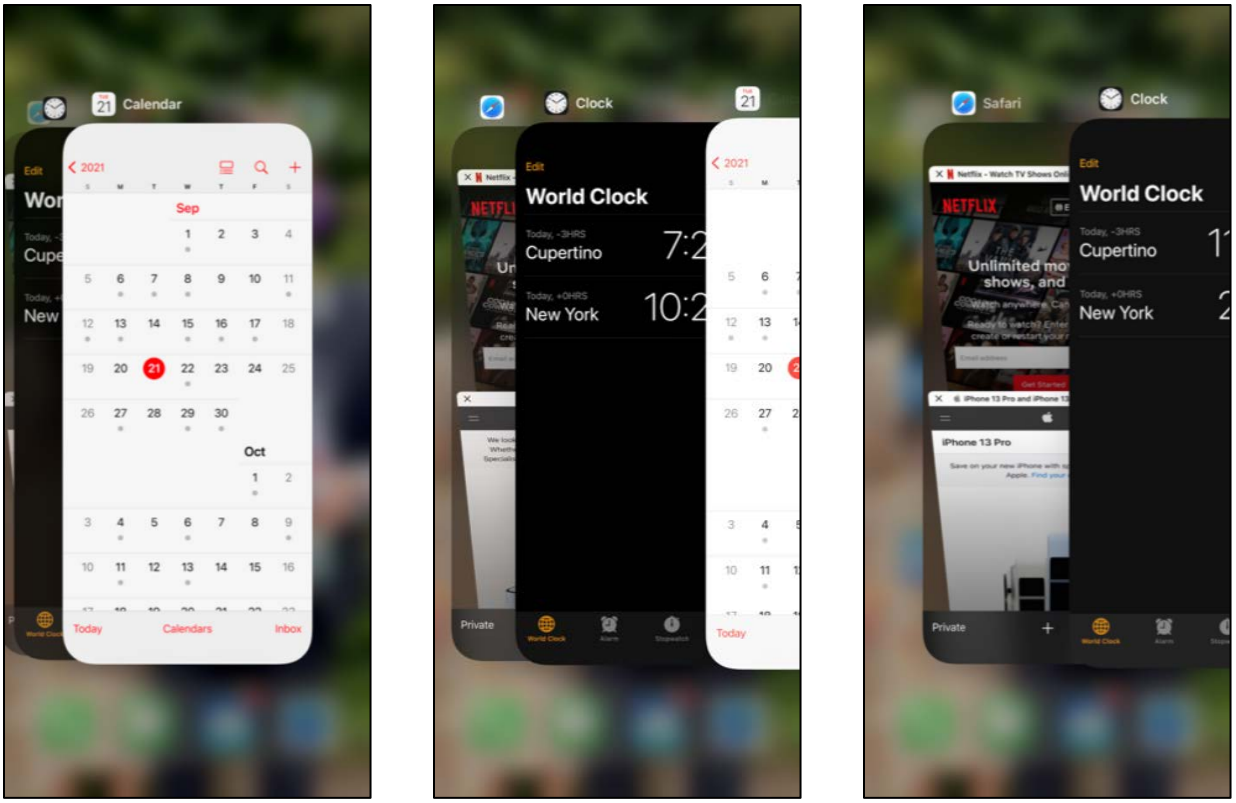

Fig. 30. Illustration of a user continuously moving the Calendar application image to the right and the subsequent application images following.

129. The Accused Products allow the user to delete at least one of the plurality of images from the three-dimensional immersive space. For example, in Figure 31 below, the Calendar application image is being moved up. If a user continuously moves the image upward, that image will be deleted from the plurality of images and the order of each remaining image will shift, i.e. with the Safari application image moved to where the Clock application image was previously located and the Clock application image moved to where the Calendar application image was previously located.

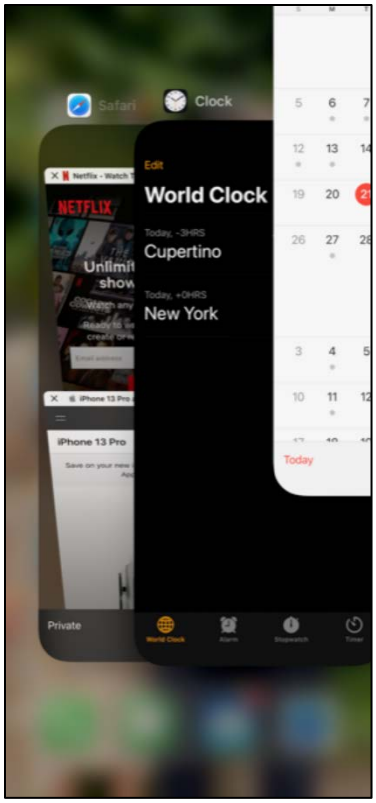

Fig. 31. Illustration of a user continuously moving the Calendar application image upward until that image disappears off the display and the Clock application image is moved to the space where the Calendar application image was previously located.

130. Apple's infringement of at least Claim 10 of the '868 patent is ongoing.

131. Further, Apple's infringement as described in Count I above is equally applicable to Apple's infringement of the '868 patent.

132. Where acts constituting direct infringement of the '868 patent are not performed by Apple, such acts are performed by Apple's customers and/or end users, who act at the direction and/or control of Apple, with Apple's knowledge. Apple took active steps, directly and/or through contractual relationships with others, with the specific intent to cause them to use the Accused Products in a manner that infringes claims of the '868 patent. Such steps by Apple include but are not limited to advising and directing customers and/or end users to use the Accused Products in an infringing manner; advertising and promoting the use of the Accused Products in an infringing

manner; and/or distributing instructions that guide end users to use the Accused Products in an infringing manner. Apple performs these steps, which constitute induced infringement, with knowledge of the patents-in-suit and with the knowledge that the induced acts constitute infringement. Apple is aware that the normal and customary use of the Accused Products by their customers and/or end users would infringe the patents-in-suit. Apple's induced infringement is ongoing.

133. Apple's acts of infringement have caused damage to SpaceTime3D, and SpaceTime3D is entitled to recover from Apple the damages it sustained as a result of Apple's wrongful acts in an amount subject to proof at trial.

WILLFUL INFRINGEMENT

134. SpaceTime3D repeats and incorporates by reference each preceding paragraph as if fully set forth herein and further states:

135. Apple's infringement of the patents-in-suit was and continues to be willful, intentional, deliberate, and/or in conscious disregard of SpaceTime3D's rights under the patents-in-suit.

136. For one non-exhaustive example, Apple received actual notice and/or had actual knowledge of the '018 patent, the parent patent to the patents-in-suit, at least in July 2011 when a patent examiner issued a final rejection of Apple's Patent Application No. 12/242,708 on the ground that its claims are "anticipated by Bakhash, U.S. Published Application No. 2007/0070066A1," which matured to become the '018 patent.

137. Patent Application No. 12/242,708 is hardly the only Apple patent application that cites a SpaceTime3D patent application. Indeed, on information and belief, Apple's patent applications have cited SpaceTime3D's patent applications 78 times.

138. As another example, Apple employees had actual knowledge of the technology underlying the patents-in-suit as early as March 2008 when an Apple executive relayed to Mr. Bakhash that he had shared the technology to multiple groups within Apple. In addition, an Apple account executive was aware of coverage of SpaceTime3D's technology in the *Wall Street Journal*, and a NYU campus representative for Apple wrote to Mr. Bakhash that he was "blown away" by the SpaceTime3D technology, that the technology was a "significant time saver," and asked Mr. Bakhash to "keep [him] updated with SpaceTime news and [he'll] definitely spread the word."

139. In or around October 2008, an acquaintance of Mr. Bakhash informed Steve Jobs about SpaceTime3D's technology and feedback from early users who sought a Mac version of the search program using that technology.

140. The filing of this lawsuit also provides Apple with further notice of each of the Asserted Patents such that any continued infringement by Apple after the filing date of this lawsuit constitutes willful infringement.

141. Apple willfully infringed and continues to infringe the patents-in-suit having actual knowledge of the patents.

DEMAND FOR JURY TRIAL

142. Plaintiff demands a trial by jury on all issues.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff SpaceTime3D requests entry of judgment in its favor and against Defendant Apple Inc. as follows:

a) Declaration that Apple has infringed and continues to infringe United States Patent Nos. 8,881,048; 9,304,654; and 9,696,868;

b) Awarding damages, in an amount no less than a reasonable royalty, arising out of Apple's infringement of United States Patent Nos. 8,881,048; 9,304,654; and 9,696,868 to SpaceTime3D, together with pre-judgment and post-judgment interest, in an amount according to proof;

c) Awarding pre-issuance damages pursuant to 35 U.S.C. § 154(d);

d) Awarding the trebling of any and all damages awarded to SpaceTime3D by reason of Apple's willful infringement of United States Patent Nos. 8,881,048; 9,304,654; and 9,696,868, pursuant to 35 U.S.C. § 284;

e) Awarding attorney's fees pursuant to 35 U.S.C. § 285 or as otherwise permitted by law; and

f) Awarding such other costs and further relief as the Court may deem just and proper.

DATED: February 10, 2022

Respectfully submitted,

/s/ Max L. Tribble, Jr.

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