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

University of Southern California, Plaintiff, vs. Google LLC, Defendant.	CASE NO. 1:25-cv-1734 **COMPLAINT FOR PATENT INFRINGEMENT** **JURY TRIAL DEMANDED**

This is an action for patent infringement arising under the Patent Laws of the United States of America, 35 U.S.C. §§ 1 *et seq.*, in which Plaintiff University of Southern California ("Plaintiff" or "USC") makes the following allegations against Defendant Google LLC ("Defendant" or "Google"):

INTRODUCTION

1. This is an action for patent infringement against Google for infringement of United States Patent Nos. 8,026,929 (the "'929 patent") and 8,264,504 (the "'504 patent") (collectively, the "Asserted Patents"). The Asserted Patents generally relate to novel systems for overlaying 2D images onto a 3D model. USC owns all right, title, and interest in each of the Asserted Patents to file this case.

2. This action arises out of Google's past and current use, sale, and offers for sale, within the United States, of Google's Google Earth, Google Maps, and Google Street View products (collectively, the "Accused Products").

3. This case concerns USC's pioneering technology that transformed the way the world experiences digital maps. The Asserted Patents disclose novel methods for integrating two-dimensional ("2D") images of real-world locations—including images captured and uploaded by users—into accurate, navigable three-dimensional ("3D") digital models and panoramic visualizations. These breakthroughs enabled ordinary photographs, photosphere images, and other arbitrary images to be synchronized with geographic data and displayed as part of immersive 3D environments. This was a groundbreaking advance, years ahead of its time, and it laid the foundation for how millions of people now experience digital mapping and modern virtual navigation.

4. As a leading research institution, USC developed these inventions through significant academic effort and innovation.

5. The functionality provided by the Accused Products rests squarely on these very inventions. The Accused Products allow users to explore interactive 3D landscapes, zoom seamlessly from outer space to ground level, and navigate streets through panoramic imagery—utilizing 2D images integrated into the underlying 3D model—all by employing the image-integration techniques USC first conceived. The Accused Products allow users to upload their own images, which are then integrated into the 3D model.

6. Google has reaped enormous commercial benefits by using, and inducing others to use, USC's patented inventions without license or compensation. Google receives yearly revenues in the tens of billions in dollars in the United States from the use and sale of the Accused Products and commands roughly two-thirds of the relevant market.

Millions of user-contributed images are uploaded for integration into the Accused Products every day.

7. Through this lawsuit, USC seeks to vindicate its rights and hold Google accountable for its unauthorized and willful use of the groundbreaking technologies and inventions embodied by the Asserted Patents.

PARTIES

8. USC is a private, nonprofit institution of higher education organized under the laws of the State of California with a principal place of business at University Park Campus, Los Angeles, California 90089. Founded in 1880, USC is recognized as a leading research university and one of the largest private employers in Los Angeles, with nationally and internationally renowned academic, research, and professional programs.

9. Google is a wholly-owned subsidiary of Alphabet, Inc., and a Delaware limited liability company with a principal place of business at 1600 Amphitheatre Parkway, Mountain View, California 94043. Google is registered to do business in the State of Texas and has been since at least November 17, 2006.

JURISDICTION AND VENUE

10. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has original subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

11. This Court has personal jurisdiction over Google in this action because Google has committed acts within this District giving rise to this action, and has established minimum contacts with this forum such that the exercise of jurisdiction over Google would

not offend traditional notions of fair play and substantial justice. Google, directly and through subsidiaries or intermediaries, has committed and continues to commit acts of infringement in this District by, among other things, making, using, offering to sell, selling, and importing products that infringe the Asserted Patents.

12. Venue is proper in this District under 28 U.S.C. § 1400(b). Upon information and belief, Google has transacted business in this District and has committed acts of direct and indirect infringement in this District by, among other things, making, using, offering to sell, selling, and importing products that infringe the Asserted Patents. Google has at least one regular and established place of business in this District. For example, upon information and belief, Google invested around $20 million to build a corporate office at 500 West 2nd Street, Austin, Texas 78701, which employs hundreds if not thousands of Google employees. Upon information and belief, Google also has leased an entire 35-story building located at 601 West 2nd Street, Austin, Texas 78701.

13. Upon information and belief, Google also operates data centers in Texas, including one in Midlothian, Texas and another one planned in Red Oak, Texas. Upon information and belief, those data centers house the images and models used in and by the Accused Products.

14. Upon information and belief, the Accused Products are developed and operated by Google Geo—a division within Google that focuses on geographic mapping products. Upon information and belief, many of the Google employees with knowledge of and who are responsible for development, operation, and sale of the Accused Products are located in this District.

15. Upon information and belief, this District was one of the first places where Google began testing of certain features of the Accused Products.

FACTUAL BACKGROUND

Technology at Issue

16. Early online digital maps allowed users to move back and forth and zoom in and out of practically anywhere on Earth through a 2D map. Satellite imagery soon followed to enhance users' experience with those online digital maps.

17. Google Earth, launched to the public in the mid-2000s, further enhanced this experience, allowing users to navigate through a 3D representation of the Earth. Initially, Google Earth relied on topographical information to create the 3D models. The 3D models were created as closed, centralized efforts without third-party additions or contributions.

18. Later, Google, and other online digital map providers, began allowing third parties and users to contribute their own data to be on top of the 3D maps and models. However, such data, including images, only appeared "hovering" on top of the 3D map or model, rather than seamless and integrated.

19. But then came along the inventions of USC and the Asserted Patents to create a system and technique that allowed for users to upload and contribute their own data and images to the 3D models in an integrated and seamless way, without any visible artifacts.

USC Asserted Patents

20. The inventions of the Asserted Patents were developed at USC by Professor Michael Naimark under a project called View Finder. The idea was to create a service for a community of users to be able to upload their own photographs to existing 3D models to

be substantially overlaid with those models. The result was to give that community of users a sense of connectedness with the Earth, where they could see their own photographs from anywhere in the world as part of an interactive model of the world.

21. The Asserted Patents are directed to systems that enable a community of users to upload arbitrary images of particular locations and have those images integrated into a 3D model or map of that location in such a way that they appear as aligned overlays within the model. Users of the 3D model can then freely navigate through the model able to view those uploaded images as seamless overlays within the model.

22. Embodiments of the Asserted Patents include systems that allow users of the 3D model to filter through the uploaded images, "snap-to-view" such images, and even control transparency of the uploaded images with respect to the 3D model.

23. Embodiments of the Asserted Patents also include systems to allow users to submit data regarding their image, including location, orientation, field of view, and time of capture, and to allow the system to determine the "pose" of the images to seamlessly integrate within the 3D model.

24. Figure 4 of the Asserted Patents depicts an example of how a user-uploaded image is overlaid within the 3D model, according to an embodiment of the patented inventions.

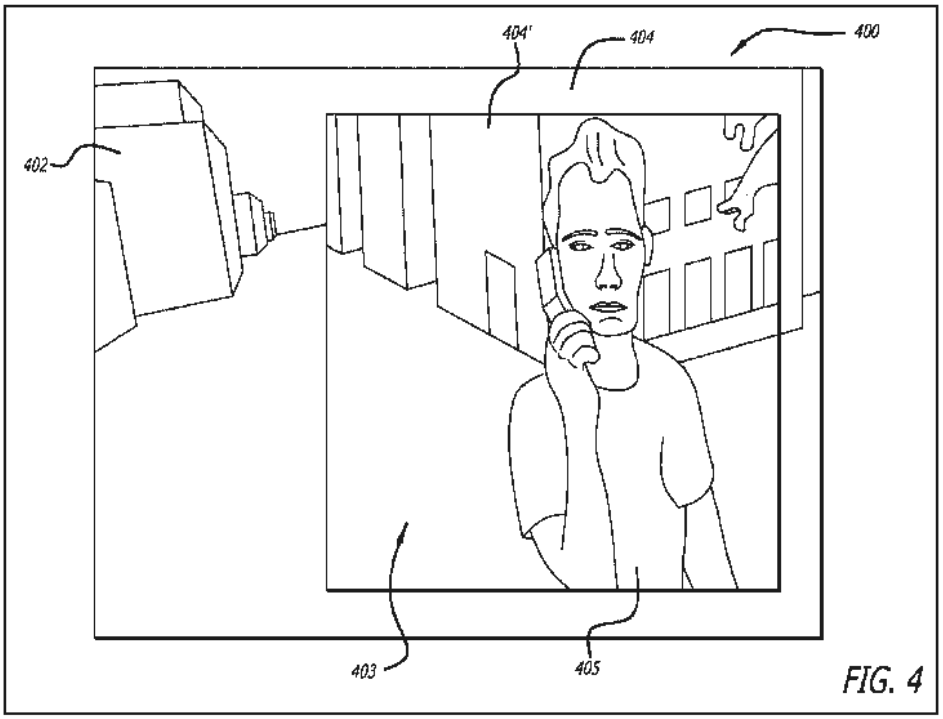


FIG. 4

25. On September 27, 2011, the USPTO duly and legally issued United States Patent No. 8,026,929 entitled "Seamlessly Overlaying 2D Images In 3D Model" to inventor Michael Naimark. A copy of the '929 patent is attached hereto as **Exhibit 1**. The '929 patent is assigned to the University of Southern California.

26. The '929 patent is based on United States Patent Application No. 11/768,732, dated June 26, 2007, and claims priority to Provisional Patent Application No. 60/816,844, dated June 26, 2006.

27. The '929 patent is valid and enforceable.

28. On September 11, 2012, the USPTO duly and legally issued United States patent No. 8,264,504 entitled "Seamlessly Overlaying 2D Images in 3D Model" to inventor Michael Naimark. A copy of the '504 patent is attached hereto as **Exhibit 2**. The '504 patent is assigned to the University of Southern California.

29. The ’504 patent is a continuation of the ’929 patent and is based on United States Patent Application No. 13/216,984, dated August 24, 2011, and too claims priority to Provisional Patent Application No. 60/816,844, dated June 26, 2006.

30. The ’504 patent is valid and enforceable.

Google Accused Products

31. Google has embedded the very innovations of the Asserted Patents into its flagship mapping platforms: Google Earth, Google Maps, and Google Street View.

32. Google Earth allows users to explore interactive 3D representations of terrain, cities, and structures, zooming from global views down to specific buildings and neighborhoods. When a user zooms in on a particular location, they can see more details of that location, including user-uploaded 2D images of a scene.

33. Google Maps integrates similar 3D modeling capabilities into its everyday navigation interface, providing users with perspective views and depictions of urban and other landscapes.

34. Google Street View extends this further by presenting panoramic sequences of real-world streetscapes, geolocated and stitched together so that users can virtually “walk” through the streets across the world.

35. Google Earth is now integrated with Google Street View, which itself is a part of Google Maps.

36. With each of Google Earth, Google Maps, and Google Street View, users can upload their own images corresponding to a specific location. Those images are then seamlessly integrated and overlaid into the pre-existing 3D model without alteration.

37. Collectively, the Accused Products rely on the precise inventions taught by the Asserted Patents. Indeed, every time a user zooms in through Google Earth to the point where the program switches to user-submitted photographs as part of Google Street View, there is infringement of the Asserted Patents.

Willful Infringement

38. Google has long been aware of the Asserted Patents and thus had actual or constructive knowledge and notice of infringement as to both of the Asserted Patents.

39. For instance, in August 2007, Google provided a research award for USC's and Mr. Naimark's View Finder project, which ultimately led to the Asserted Patents. That research award was granted after USC had already filed Provisional Patent Application No. 60/816,844, dated June 26, 2006, and United States Patent Application No. 11/768,732, dated June 26, 2007, leading to the Asserted Patents.

40. Additionally, United States Patent No. 8,487,957—assigned to Google, filed on May 29, 2008, and issued on July 16, 2013—cites the '929 patent and its underlying application directly on its face. Likewise, United States Patent No. 8,884,950—assigned to Google, filed on July 29, 2011, and issued on November 11, 2014—cites both the '929 and '504 patents as well as their underlying applications on its face. Many other Google patents also cite the Asserted Patents, including at least United States Patent Nos. 9,037,599, 9,092,908, 9,189,891, and 9,280,258.

41. Google has also been on notice of Asserted Patents since at least April 14, 2024, when USC reached out to Google to propose a potential licensing agreement for the Asserted Patents.

42. Google's infringement of the Asserted Patents has been, and continues to be, willful because Google has committed and continues to commit acts of infringement even though Google knew or should have known that its actions constituted an unjustifiably high risk of infringement.

COUNT I

INFRINGEMENT OF U.S. PATENT NO. 8,026,929

43. USC realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

44. The Accused Products infringe each and every limitation of claims 1–14 of '929 patent, either literally and/or under the doctrine of equivalents.

45. Claim 3 of the '929 patent recites:

> [preamble] A system for allowing a user to freely navigate through a 3D model to view 2D images of scenes posed within the 3D model, the system comprising:
>
> [a] a computer storage system containing:
>
> > [a1] a plurality of 2D images, each of a scene; and
> >
> > [a2] a pre-existing 3D model which includes the environment of each scene and which is not constructed using the 2D images;
>
> [b] a computer system configured to allow a user to:
>
> > [b1] navigate to different locations throughout the 3D model;
> >
> > [b2] to see a visual indicator of each 2D image within the 3D model at a location within the 3D model that corresponds to the location of the scene depicted by the 2D image that changes in viewpoint as the user navigates through the 3D model;
> >
> > [b3] to take action in connection with each visual

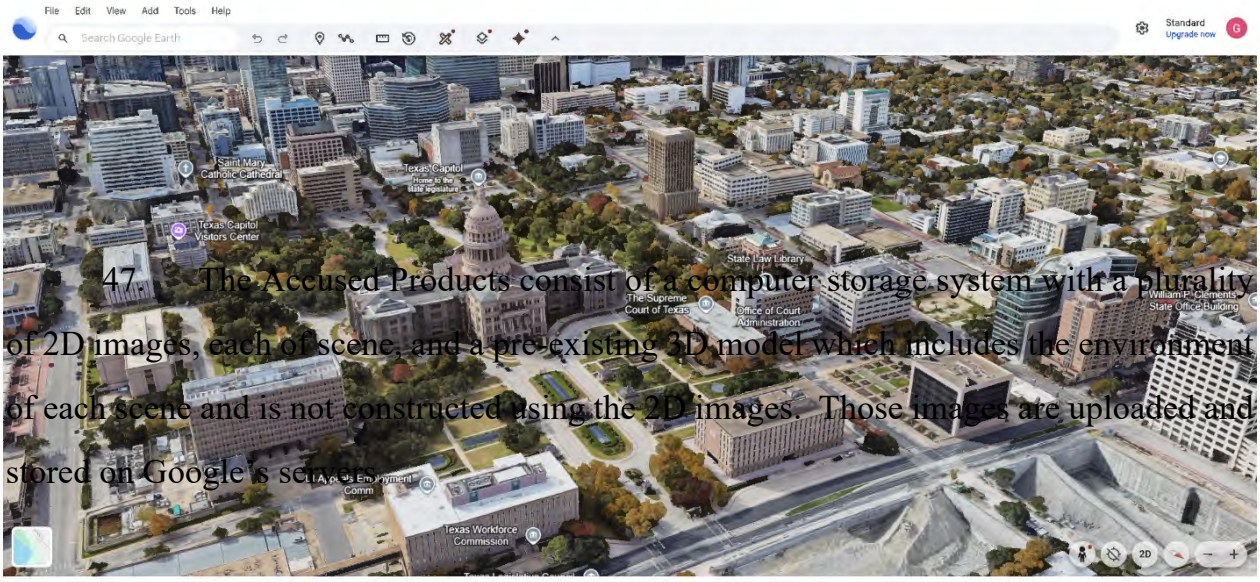
indicator; and

[b4] in response to the user taking action with respect to a visual indicator, to cause the rendering of the 3D model to snap to the pose of the scene depicted by the 2D image which corresponds to the visual indicator and to cause the user to see the 2D image posed as a substantially-aligned overlay within the 3D model in a manner which respects the integrity of the original 2D images by presenting them without alteration;

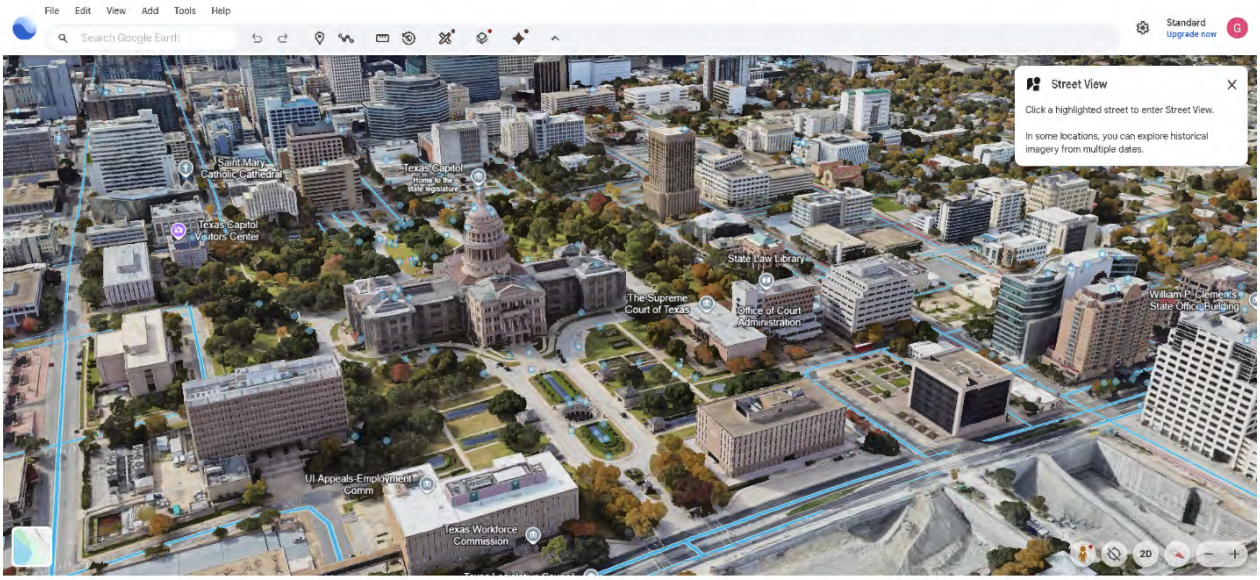
[c] a display system configured to display the 3D model, the visual indicators, and the 2D images posed as substantially-aligned overlays within the pre-existing 3D model in a manner which respects the integrity of the original 2D images by presenting them without alteration; and

[d] a user interface configured to allow the user to navigate through the 3D model and to see the visual indicators and the 2D images posed as substantially-aligned overlays within the 3D model in a manner which respects the integrity of the original 2D images by presenting them without alteration.

46. The Accused Products allow users to navigate through a 3D model of a location to view 2D images and a series of 2D images, including images uploaded by users, of scenes posed within the 3D model.



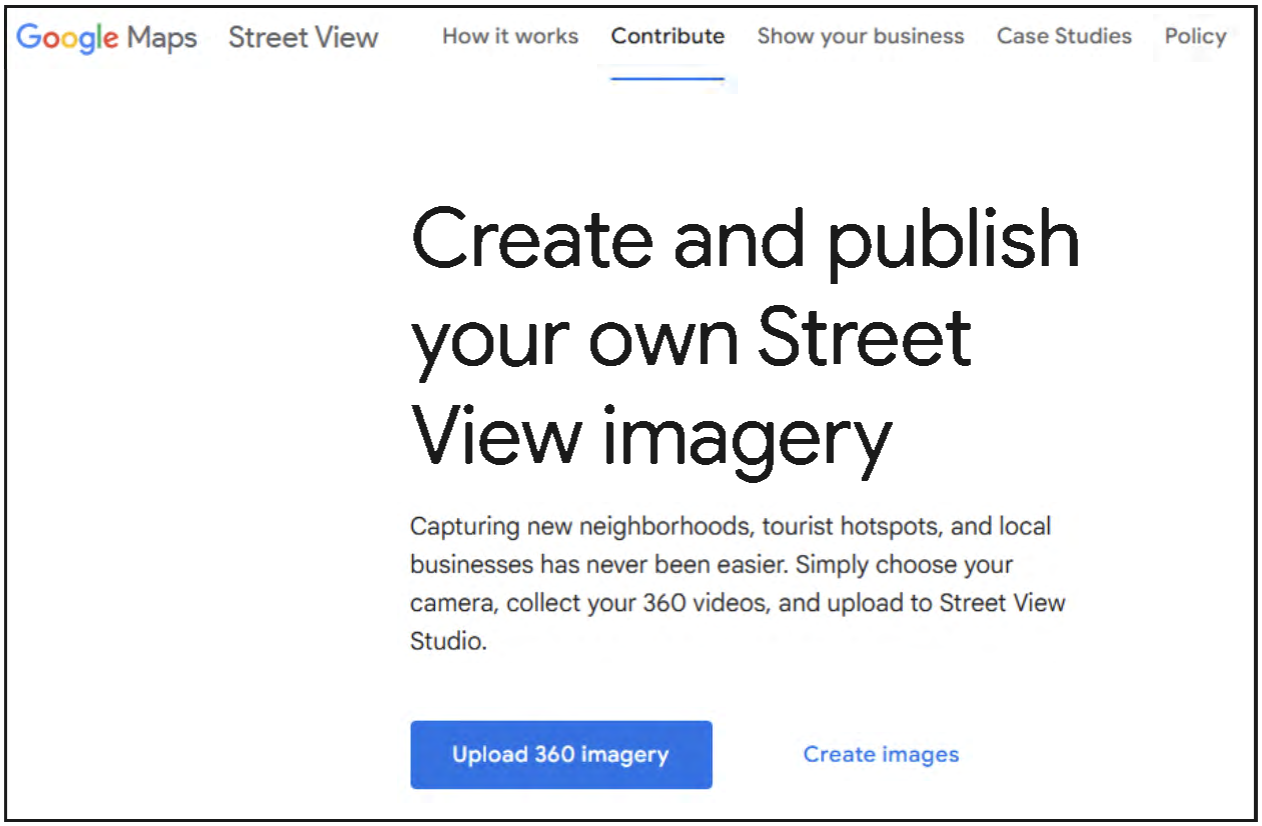
47. The Accused Products consist of a computer storage system with a plurality of 2D images, each of scene, and a pre-existing 3D model which includes the environment of each scene and is not constructed using the 2D images. Those images are uploaded and stored on Google's servers.



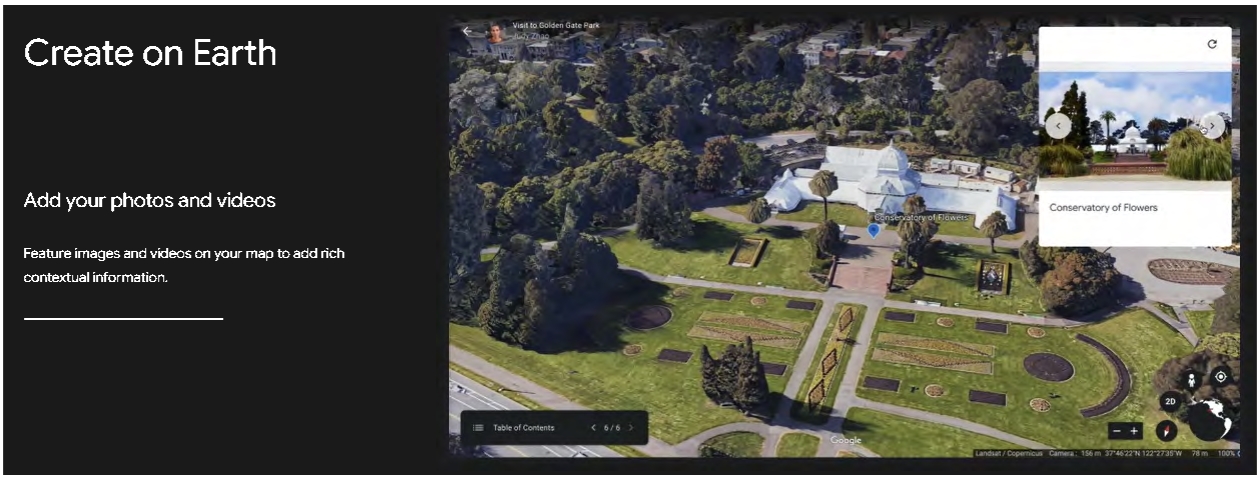
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https://www.google.com/streetview/.



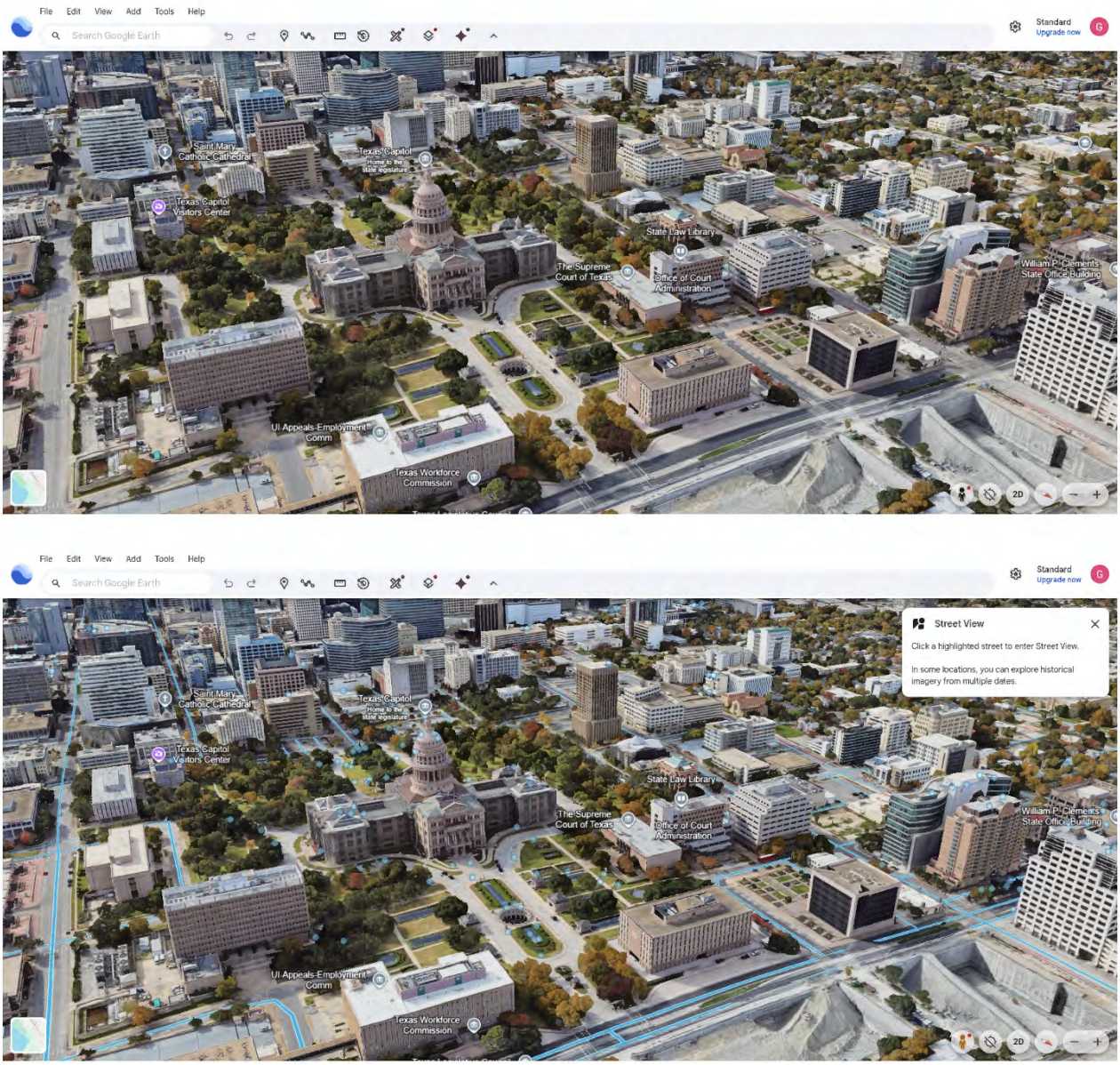
https://www.google.com/streetview/contribute/.



https://www.google.com/intl/en/earth/index.html.

48. The Accused Products consist of a computer system that is configured to allow users to navigate to different locations throughout the 3D model. Visual indicators

are used in the Accused Products to indicate 2D images within the 3D model that correspond to the locations of the scenes of those images. As a user navigates through the 3D model the viewpoint changes and users can interact with the model and the visual indicators to cause the model to snap to specific 2D images which are substantially-aligned overlays within the 3D model. Those 2D images are presented without alteration.



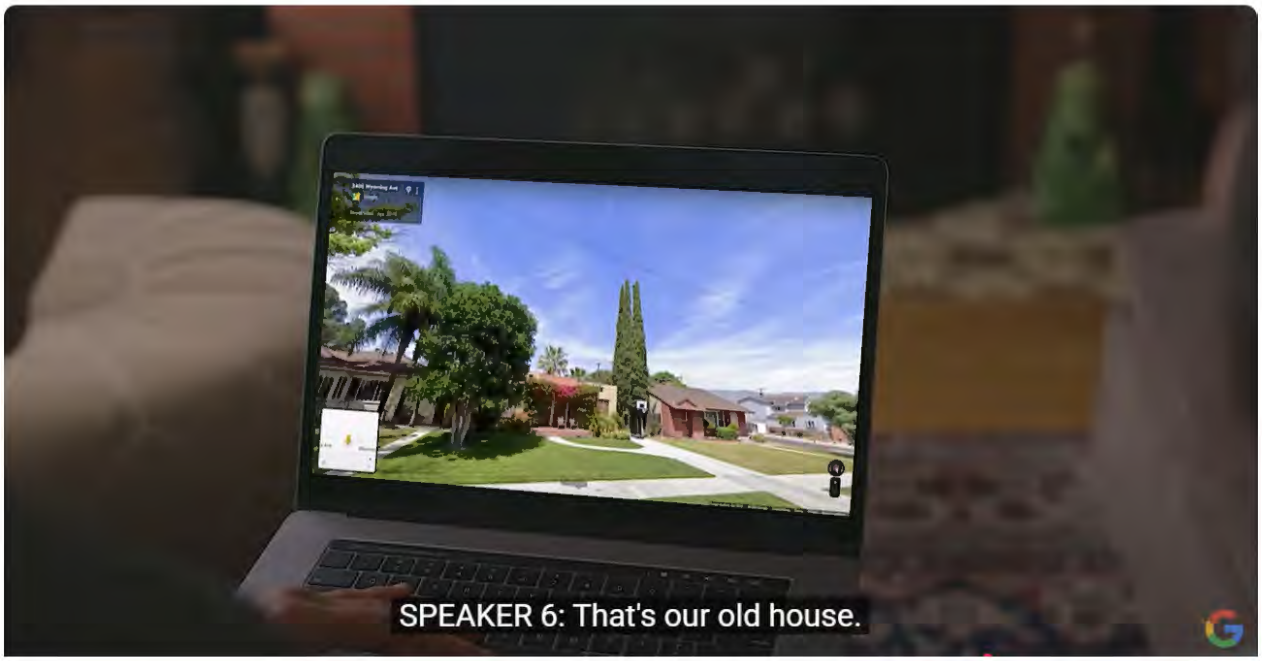
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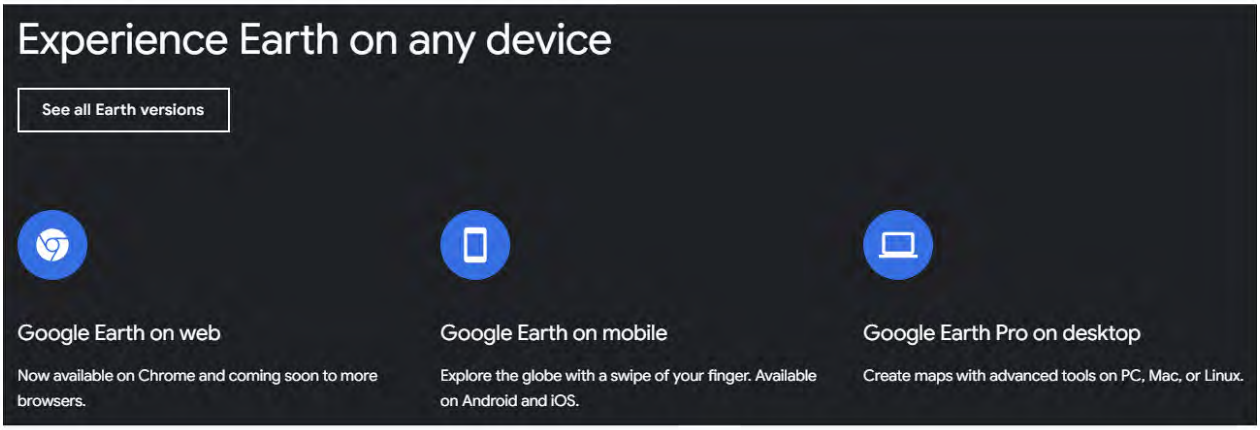


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49. The Accused Products provide a display system configured to display the above-described features.



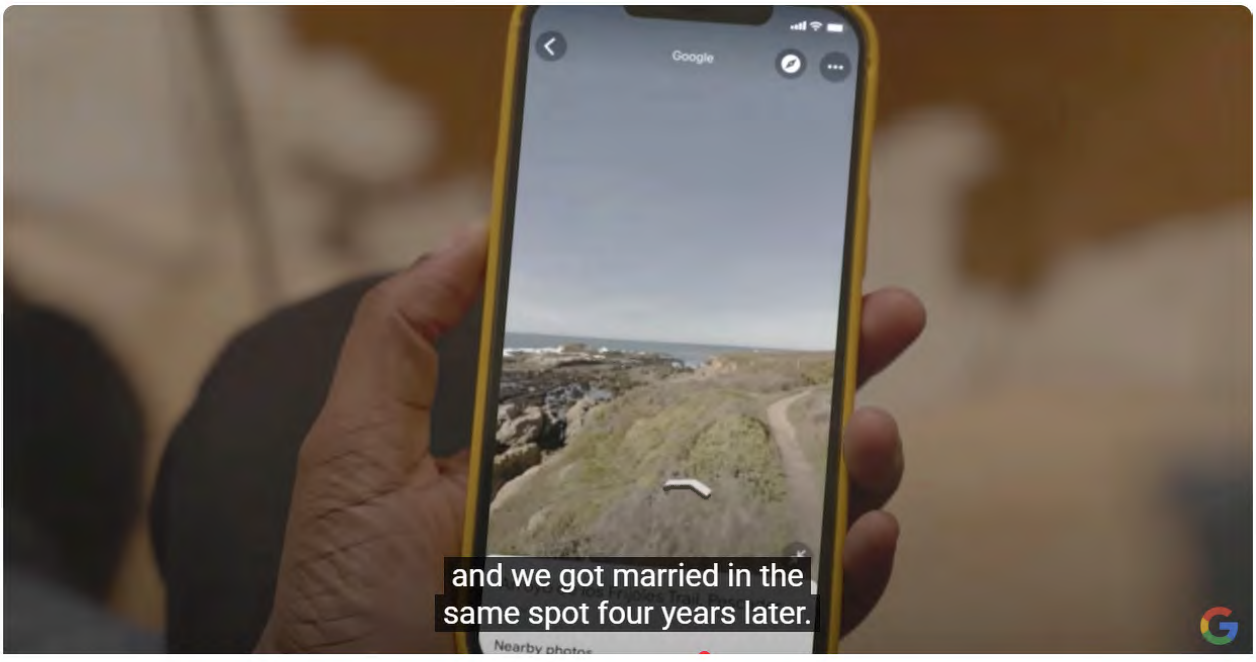
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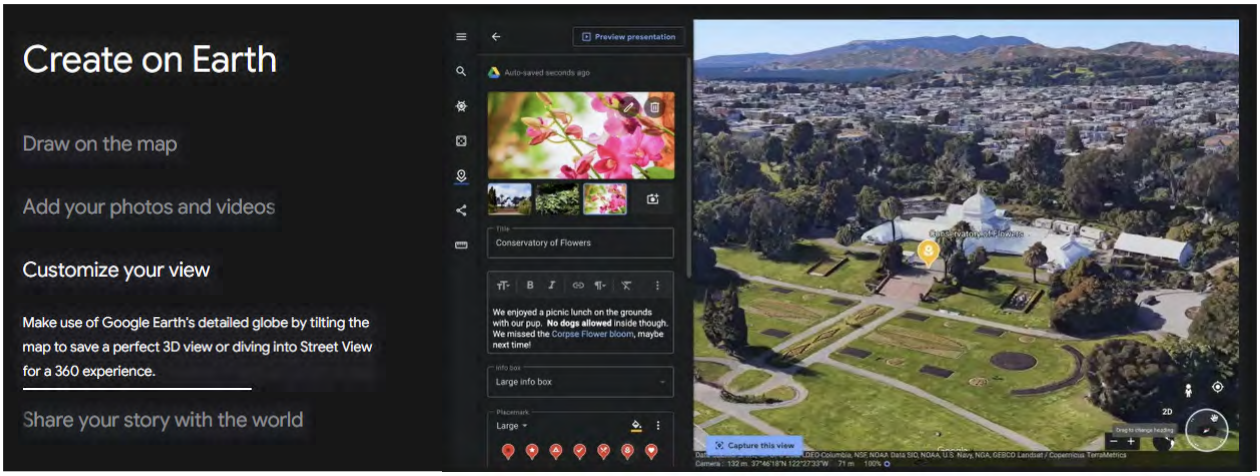
https://www.google.com/intl/en/earth/index.html.

50. The Accused Products provide a user interface configured to provide the user the above-described features.





https://www.youtube.com/watch?v=brSdUNadZmM&t=61s.



https://www.google.com/intl/en/earth/index.html.

51. Google's use, offer to sell, or sale of the Accused Products in the United States during the term of the '929 patent infringes at least one claim of the '929 patent under 35 U.S.C. § 271.

52. The Accused Products, when offered for sale, sold, and/or when used as directed, are used in a manner that directly infringes at least one of the claims of the '929 patent either literally and/or under the doctrine of equivalents.

53. The use, offering to sell, or sale of the Accused Products by Google actively induces infringement of at least one claim of the '929 patent, either literally and/or under the doctrine of equivalents.

54. The use, offering to sell, or sale of the Accused Products by Google contributorily infringes at least one claim of the '929 patent, either literally and/or under the doctrine of equivalents.

55. Google has performed and continues to perform these affirmative acts with knowledge of the ’929 patent and with the intent, or willful blindness, that the acts directly infringe the ’929 patent.

56. Google’s acts of infringement have caused damage to USC, and USC is entitled to recover from Google the damages it has sustained as a result of Google’s wrongful acts in an amount subject to proof at trial.

57. Google’s acts of infringement have caused, and unless restrained and enjoined, will continue to cause irreparable injury and damage to USC for which there is no adequate remedy at law.

58. This is an exceptional case within the meaning of 35 U.S.C. § 285, which warrants reimbursement of USC’s reasonable attorney fees.

COUNT II

INFRINGEMENT OF U.S. PATENT NO. 8,264,504

59. USC realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

60. The Accused Products infringe each and every limitation of claims 1–17 of ’504 patent, either literally and/or under the doctrine of equivalents.

61. Claim 5 of the ’504 patent recites:

> [preamble] A system for allowing a user to freely navigate through a 3D model to view 2D images of scenes posed within an environment of the scene as depicted by an environment image that is associated with the 3D model, the system comprising:
>
> [a] a computer storage system configured to contain:
>
> [a1] a plurality of 2D images, each of a scene;

and

[a2] a pre-existing 3D model which includes the environment of each scene and which is not constructed using the 2D images; and

[b] a computer system configured to allow a user to:

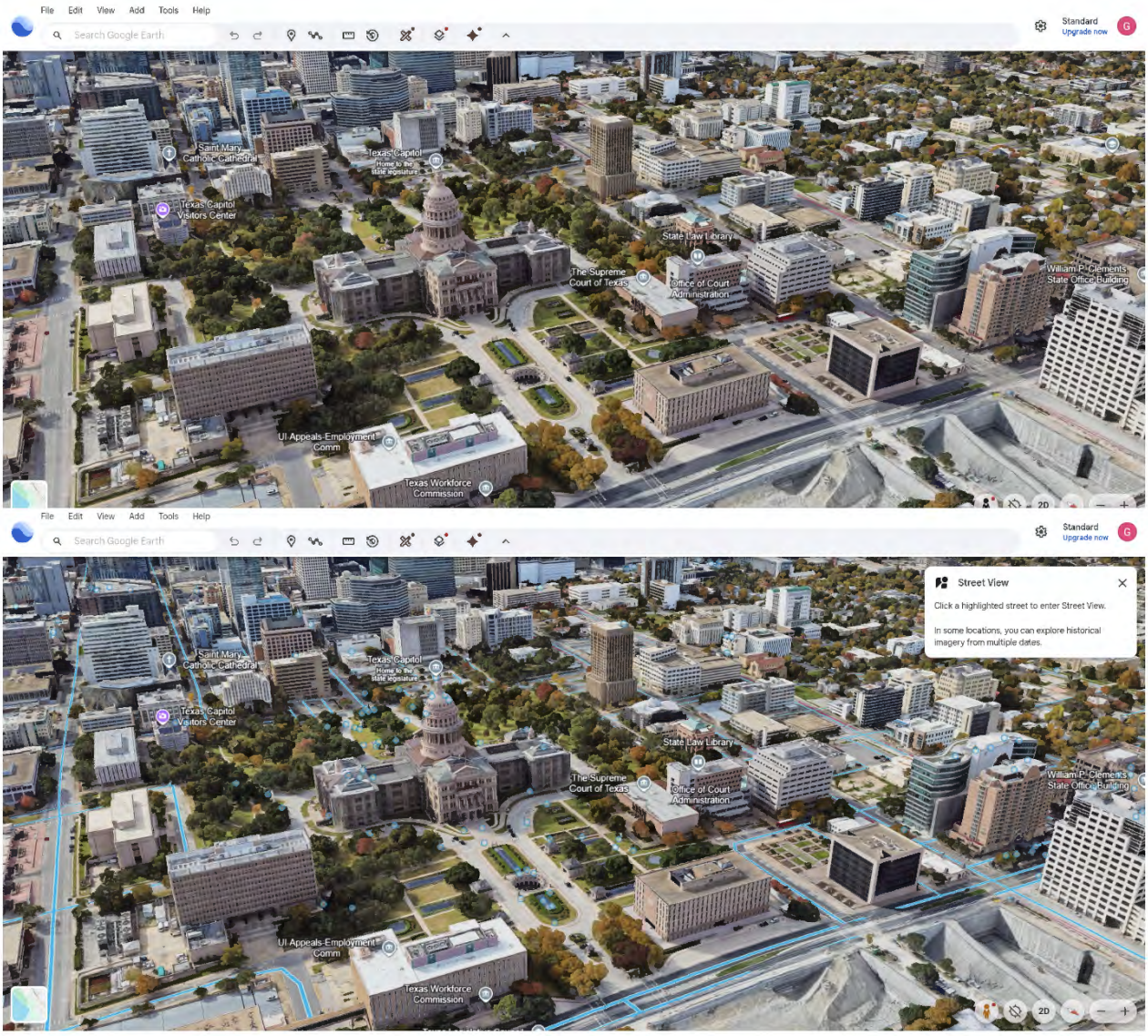
[b1] navigate to different locations throughout the 3D model;

[b2] to see a visual indicator of each 2D image within the 3D model at a location within the 3D model that corresponds to the location of the scene depicted by the 2D image;

[b3] to take action in connection with each visual indicator; and

[b4] in response to the user taking action with respect to each visual indicator, to cause the user to see the 2D image posed as a substantially-aligned overlay within an environment of the scene as depicted by an environment image that is associated with the 3D model in a manner which respects the integrity of the original 2D images by presenting them without alteration.

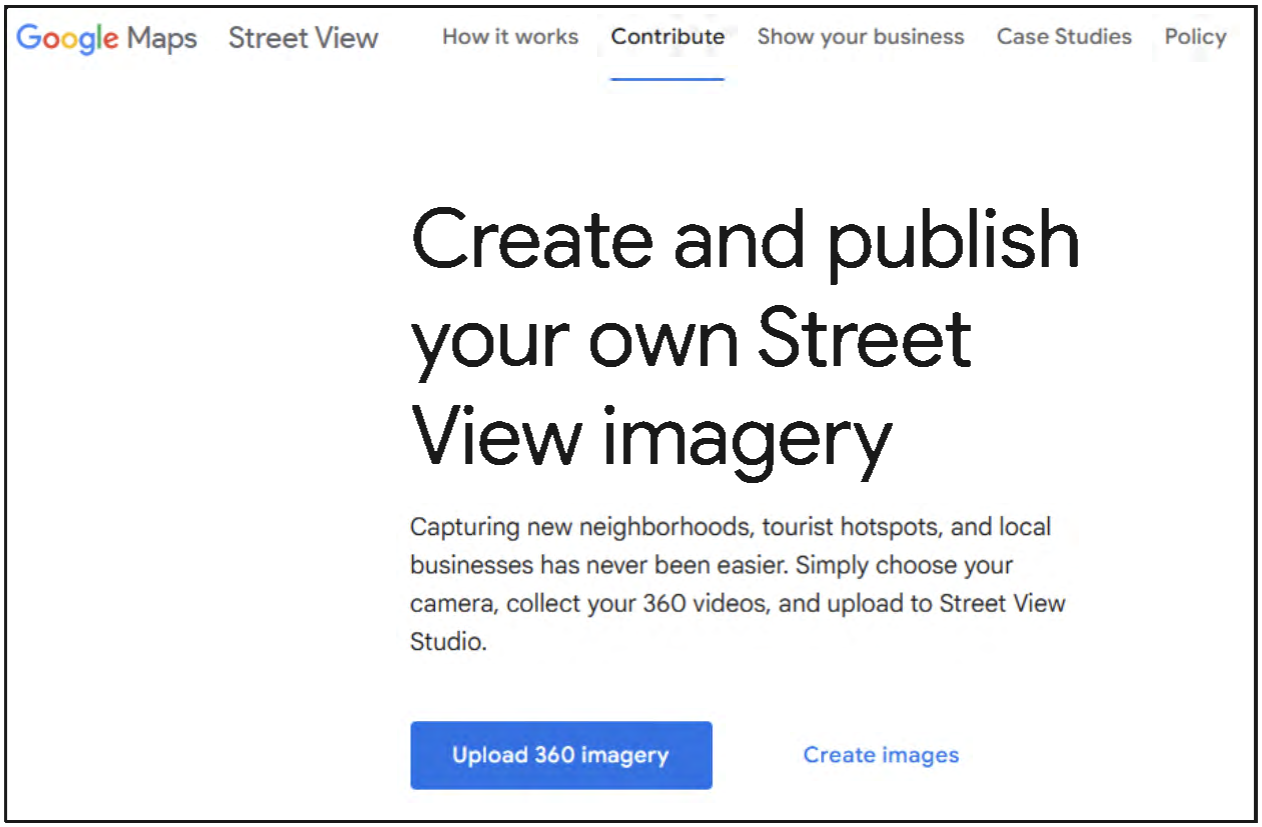
62. The Accused Products allow users to navigate through a 3D model of a location to view 2D images, including images uploaded by users, of scenes posed within an environment of the scene as depicted by an environment image that is associated with the 3D model.



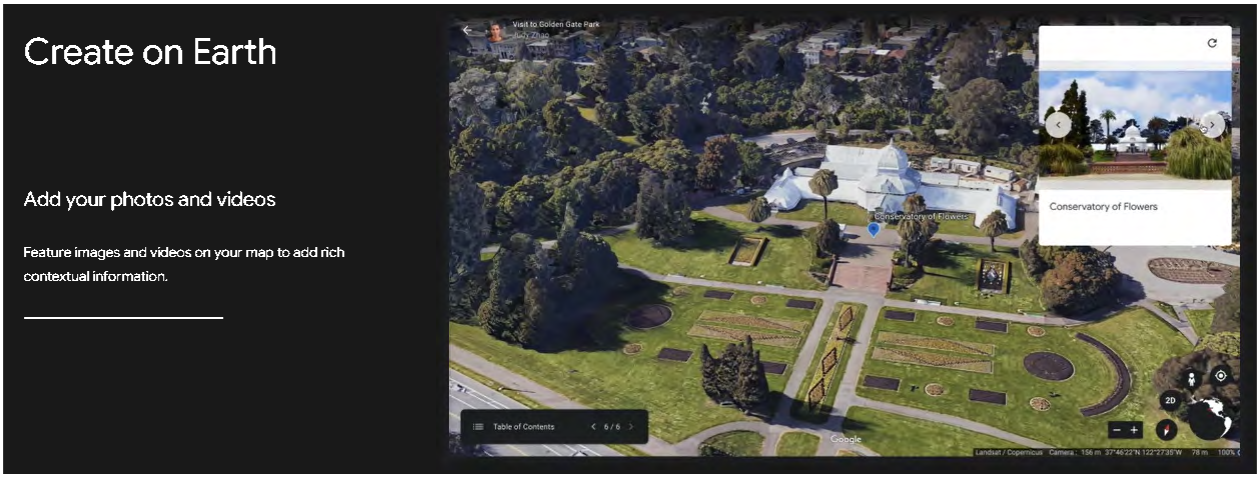
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https://www.google.com/streetview/.

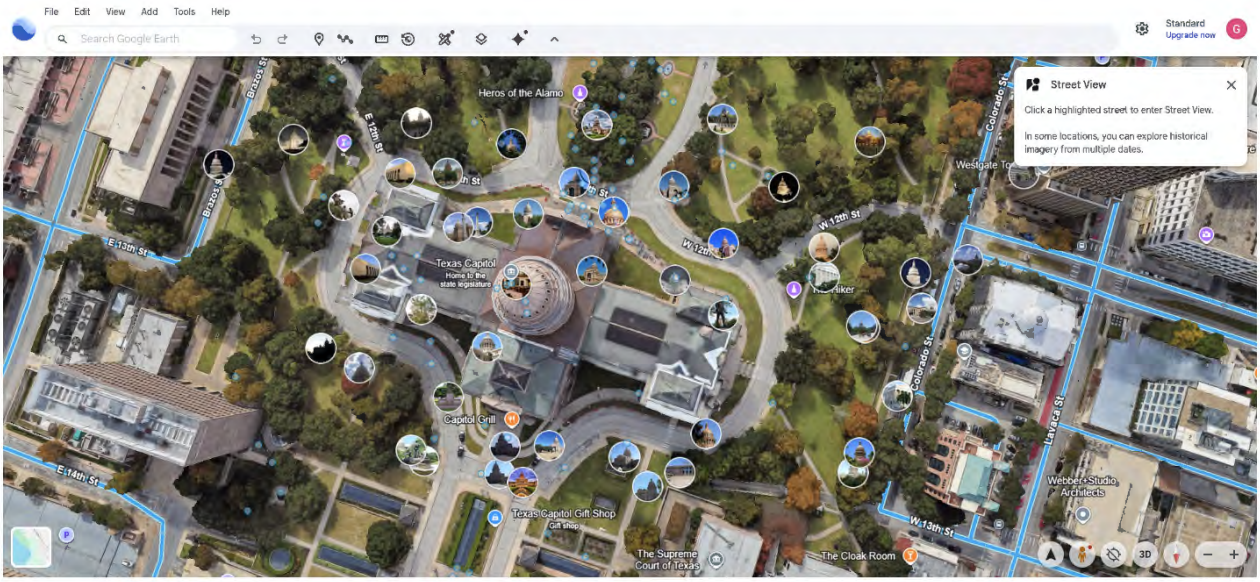


https://www.google.com/streetview/contribute/.



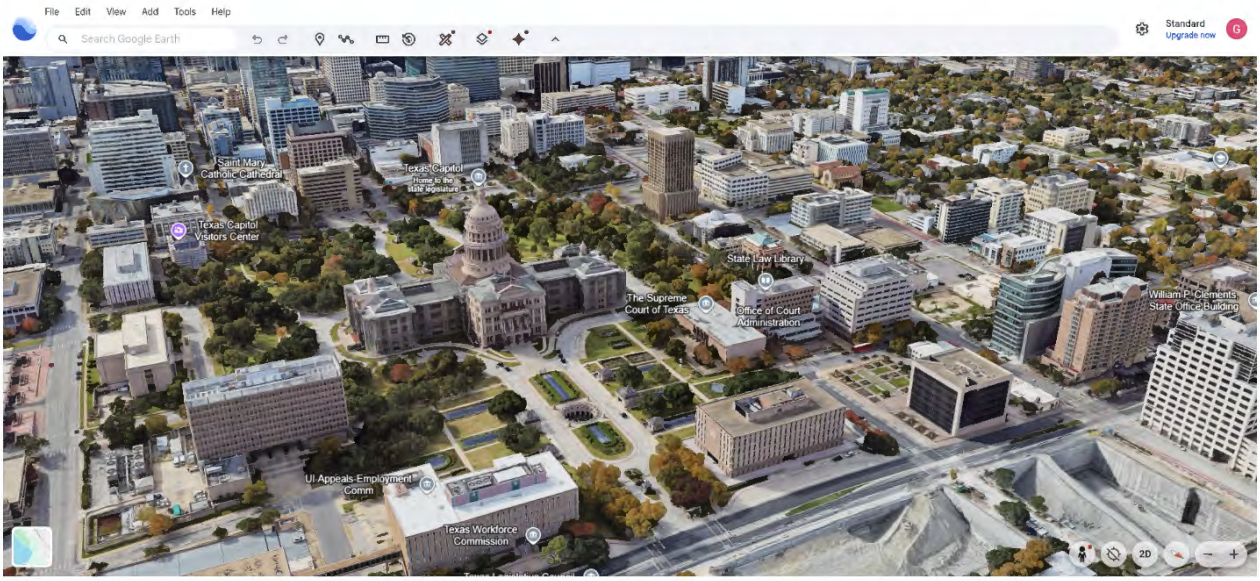
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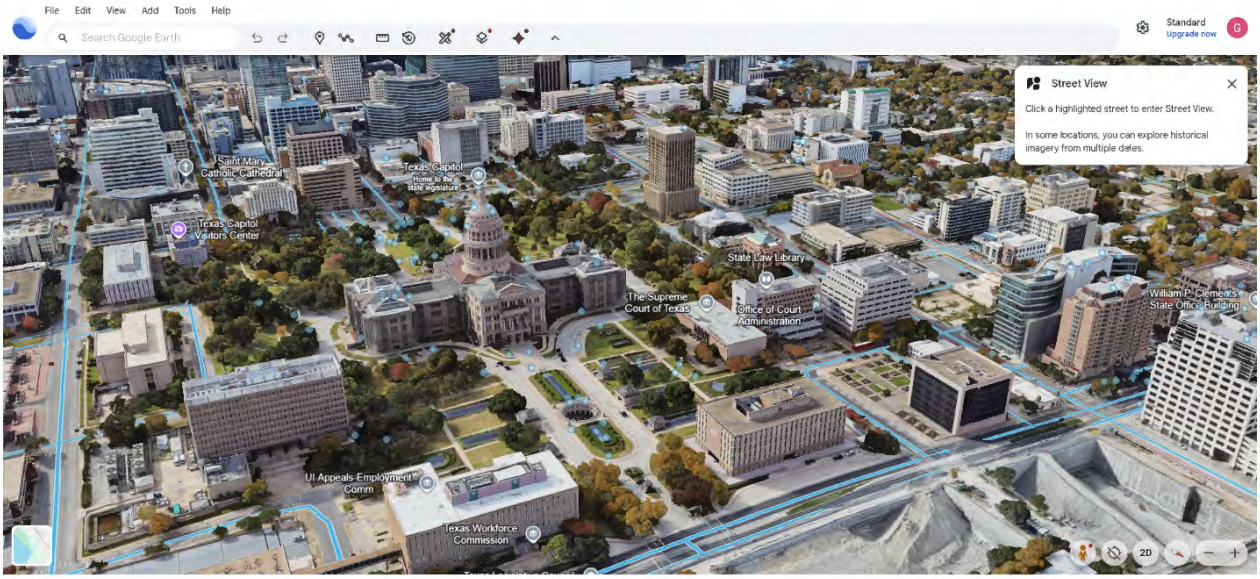
63. The Accused Products consist of a computer storage system with a plurality of 2D images, each of scene, and a pre-existing 3D model which includes the environment of each scene and is not constructed using the 2D images. Those images are uploaded and stored on Google's servers.



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64. The Accused Products consist of a computer system that is configured to allow users to navigate to different locations throughout the 3D model. Visual indicators are used in the Accused Products to indicate 2D images within the 3D model that correspond to the locations of the scenes of those images. As a user navigates through the 3D model the viewpoint changes and users can interact with the model and the visual indicators to cause the model to snap to specific 2D images which are substantially-aligned overlays within the 3D model. Those 2D images are presented without alteration.





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65. Google's use, offer to sell, or sale of the Accused Products in the United States during the term of the '504 patent infringes at least one claim of the '504 patent under 35 U.S.C. § 271.

66. The Accused Products, when offered for sale, sold, and/or when used as directed, are used in a manner that directly infringes at least one of the claims of the '504 patent either literally and/or under the doctrine of equivalents.

67. The use, offering to sell, or sale of the Accused Products by Google actively induces infringement of at least one claim of the '504 patent, either literally and/or under the doctrine of equivalents.

68. The use, offering to sell, or sale of the Accused Products by Google contributorily infringes at least one claim of the '504 patent, either literally and/or under the doctrine of equivalents.

69. Google has performed and continues to perform these affirmative acts with knowledge of the '504 patent and with the intent, or willful blindness, that the acts directly infringe the '504 patent.

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

71. Google's acts of infringement have caused, and unless restrained and enjoined, will continue to cause irreparable injury and damage to USC for which there is no adequate remedy at law.

72. This is an exceptional case within the meaning of 35 U.S.C. § 285, which warrants reimbursement of USC's reasonable attorney fees.

PRAYER FOR RELIEF

WHEREFORE, USC respectfully requests that this Court enter a Judgment and Order against Google as follows:

A. Entering a judgment and declaration against Google and in favor of USC in all respects, including that Google has and will continue to infringe at least one claim of the '929 and '504 patents;

B. For an order permanently enjoining Google, and its respective officers, directors, shareholders, agents, servants, employees, attorneys, all parent, subsidiary and affiliate corporations, their successors in interest and assigns, and all other entities and individuals acting in concert with it or on its behalf, including customers, from making, importing, using, offering for sale, and/or selling any product or service falling with the scope of any claim of the '929 and '504 patents, including Google Earth, Google Maps, and Google Street View, or otherwise infringing any claim of the '929 and '504 patents;

C. Alternatively, in the event that an injunction does not issue, that this Court award a compulsory ongoing future royalty;

D. For damages arising from Google's infringement of the '929 and '504 patents, including lost profits suffered as a result of Google's infringement and in an amount not less than a reasonable royalty, together with pre-judgment and post-judgment interest;

E. That this Court declare Google's infringement to be willful and award increased damages in an amount not less than three times the damages assessed for Google's infringement for the period of such willful infringement pursuant to 35 U.S.C. § 284;

F. Entering a judgment that this is an exceptional case and an award of reasonable attorneys' fees pursuant to 35 U.S.C. § 285;

G. Awarding USC its costs and expenses; and

H. Granting such other relief as the Court deems just and proper.

JURY DEMAND

USC, by and through its undersigned counsel, hereby demands, pursuant to Rule 38 of the Federal Rules of Civil Procedure, a trial by jury on all claims so triable in this action.

DATED: October 27, 2025

Respectfully submitted,

/s/ E. Leon Carter

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