

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

FUNDAMENTAL INNOVATION
SYSTEMS INTERNATIONAL LLC,

Plaintiff,

vs.

APPLE, INC.,

Defendant.

Civil Action No. 2:18-cv-00048

JURY TRIAL DEMANDED

**COMPLAINT FOR PATENT INFRINGEMENT
AND JURY DEMAND**

Plaintiff Fundamental Innovation Systems International LLC (“Plaintiff” or “Fundamental”), by and through its undersigned counsel, brings this action against Defendant Apple, Inc. (“Apple”) to prevent Defendant’s continued infringement of Plaintiff’s patents without authorization and to recover damages resulting from such infringement.

PARTIES

1. Plaintiff is a Delaware limited liability company with a place of business located at 2990 Long Prairie Road, Suite B, Flower Mound, Texas 75022.

2. Plaintiff is the owner by assignment of all right, title, and interest in U.S. Patent Nos. 6,936,936 (the “’936 Patent”), 7,239,111 (the “’111 Patent”), 7,834,586 (the “’586 Patent”), 8,232,766 (the “’766 Patent”), and 8,624,550 (the “’550 Patent”) (collectively, the “Patents-in-Suit”).

3. On information and belief, Defendant Apple, Inc. is a California corporation with a place of business at One Apple Park Way, Cupertino, California 95014. Apple may be served through its registered agent CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas

75201.

4. On information and belief, Apple directly and/or indirectly imports, develops, designs, manufactures, uses, distributes, markets, offers to sell and/or sells products and services in the United States, including in this district, and otherwise purposefully directs activities to the same.

JURISDICTION AND VENUE

5. 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.*, including 35 U.S.C. § 271. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

6. This Court has personal jurisdiction over Apple because Apple has substantial, systematic, and continuous contacts with this judicial district. On information and belief, Apple has purposefully availed itself of the privileges of conducting business in the State of Texas, regularly conducts business in the State of Texas and in this judicial district, and maintains facilities and employees within Texas and within this judicial district. On information and belief, Apple has sold and offered to sell infringing products in this State and judicial district and has committed acts of patent infringement and/or contributed to or induced acts of patent infringement by others in this judicial district and elsewhere in Texas. For example, Apple sells infringing products through its stores located in Plano, Texas and Frisco, Texas. Apple also has authorized retailers for infringing products in this judicial district such as Simply Mac in Tyler, Texas and Fry's Electronics, Inc., in Plano, Texas. Plaintiff's cause of action arises directly from Apple's business contacts and other activities in the State of Texas.

7. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b)-(d) and 1400(b). Apple is subject to personal jurisdiction in this judicial district, and has a regular and established place of business in this judicial district, including Apple Stores at 6121 West Park Boulevard in Plano, Texas and 2601 Preston Road in Frisco, Texas. Apple also has Apple Stores in other locations in the state of Texas, and Apple has facilities in Austin, Texas. Further, certain

of the acts giving rise to Plaintiff's claims of infringement alleged herein occurred in this judicial district, including the sale and offers to sell infringing products in this judicial district through Apple's stores, its retailers and its website at www.apple.com.

8. In December 2016, Plaintiff filed case no. 16-cv-01425 in this district against LG Electronics, Inc., LG Electronics U.S.A., Inc., LG Electronics MobileComm U.S.A. Inc., LG Electronics Mobile Research U.S.A. LLC, and LG Electronics Alabama, Inc., asserting infringement of, *inter alia*, the '111, '550, '586 and '766 Patents ("the LG Case").

9. In December 2016, Plaintiff filed case no. 16-cv-01424 in this district against Huawei Investment & Holding Co., Ltd., Huawei Technologies Co., Ltd., Huawei Device USA, Inc., and Futurewei Technologies, Inc., asserting infringement of, *inter alia*, the '111, '550, '586 and '766 Patents ("the Huawei Case").

10. In February 2016, Plaintiff filed case no. 17-cv-00145 in this district against Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc., asserting infringement of, *inter alia*, the '111, '550, '586, '766 and '936 Patents ("the Samsung Case").

11. On January 31, 2018, this court issued an order in the Samsung Case construing claim terms in the '111, '550, '586, '766 and '936 Patents.

12. On April 2, 2018, this court issued an order in the LG Case and Huawei Case construing claim terms in the '111, '550, '586, and '766 Patents.

13. In view of the LG Case, Huawei Case and Samsung Case, this Court has substantial knowledge regarding the asserted patents, and principles of judicial economy further support venue in this District.

FACTUAL ALLEGATIONS

The Patents-in-Suit

14. The Patents-in-Suit relate to, among other things, novel techniques for using Universal Serial Bus ("USB") in connection with mobile devices to both facilitate data communication and allow for the charging of certain classes of devices. This technology

represented a fundamental break from previous techniques for mobile device charging and has supported the rapid miniaturization of mobile devices, improved user experiences and led to a dramatic increase in performance and features.

15. The Patents-in-Suit resulted from a large scale research and development program at Research In Motion Limited (“RIM”), later reorganized as BlackBerry Limited (“BlackBerry”). At the time of inventions, RIM was a global leader and pioneer in the field of wireless mobile communications. The company was founded in 1984 and revolutionized the mobile industry when it launched the BlackBerry® 850 in 1999. Fundamental is responsible for protecting and licensing seminal BlackBerry innovations in the field of USB charging.

Apple’s Accused Products and Infringement

16. On information and belief, Apple makes, uses, sells, offers for sale and/or imports infringing charging adapters and mobile devices in the United States, including but not limited to the Apple 1A charging adapter, Apple 2.1A charging adapter and Apple 2.4A charging adapter; iPhone Xs, iPhone Xs Max, iPhone XR, iPhone X, iPhone 8, iPhone 8+, iPhone 7, iPhone 7+, iPhone SE, iPhone 6s, iPhone 6s+, iPhone 6, iPhone 6+, iPhone 5s, iPhone 5c, iPhone 5; iPad 6, iPad Pro 2nd 10.5", iPad Pro 2nd 12.9", iPad 5, iPad Pro 9.7", iPad Pro 12.9", iPad mini 4, iPad mini 3, iPad Air 2, iPad mini 2, iPad Air, iPad 4; iPod Touch 6th Gen, iPod Touch 5th Gen; AirPods; Apple Watch 1st Gen, Apple Watch Series 1, Apple Watch Series 2, Apple Watch Series 3, Apple Watch Series 4; Beats Pill+; and Macbook Pro 4th Gen, Macbook 8, Macbook 9, Macbook 10 and Macbook Air 8, and other models that include similar functionality (“Accused Products”).

17. Certain of the Accused Products are mobile devices that include USB interfaces, USB communication paths and charging sub-systems that are operably connected to the USB interface. The charging sub-systems are configured to receive power and use the power to charge a battery. The mobile devices are able to detect an identification signal received via the USB interface, which may be an abnormal USB data condition and is different than USB enumeration, such as a voltage of 2 volts on the D+ line and 2.7 volts on the D- line of the USB communication

path. The identification signal enables the mobile device to draw current unrestricted by a USB specification limit.

18. Certain of the Accused Products are charging adapters that are designed to provide power to a mobile device. The charging adapters receive power from a power socket and include a power converter that regulates the received power to generate a DC power output. The charging adapters are configured to generate an identification signal, such as a voltage of 2 volts on a D+ line and 2.7 volts on a D- line, that indicates to the mobile device that it is receiving power from a source that is not a USB host or hub. The charging adapters are able to supply current to a mobile device without regard to at least one associated condition specified in a USB specification.

Apple's Knowledge of the Patents-in-Suit and Infringement

19. On December 14, 2015, Fundamental sent a letter to Mr. B.J. Watrous, Apple's VP and Chief IP Counsel, which identified the Patents-in-Suit and suggested to Apple that it should take a license to the Patents-in-Suit. On August 21, 2017, Fundamental sent a letter to Ms. Denise Kerstein, Head of Patent Acquisitions at Apple, and Mr. Jeff Lasker, Legal Counsel IP Transactions at Apple, reiterating Fundamental's desire to license the Patents-in-Suit to Apple and specifically identifying multiple Apple products that infringe the Patents-in-Suit. Fundamental also provided Apple with exemplary claim charts demonstrating infringement on August 31, 2017.

20. After being notified of its infringement, Apple sent a letter on April 5, 2018 indicating that it believed the Patents-in-Suit were invalid in view of multiple requests for *inter partes* review ("IPR") that had been filed against the Patents-in-Suit. Apple's letter did not identify any basis for believing that its products do not infringe the Patents-in-Suit.

21. Subsequent to Apple's April 5, 2018 letter, the Patent Trial and Appeal Board ("PTAB") denied institution of all IPRs that had been filed against the Patents-in-Suit, with the exception of one IPR petition filed against the '550 Patent – IPR2018-00111 ("the '0111 IPR"). In the '0111 IPR, the PTAB found "that Petitioner has demonstrated a reasonable likelihood that it would prevail with respect to" only claim 10 of the '550 Patent, but not with respect to any other claims. Notably, the '0111 IPR did not involve the prior art grounds discussed in Apple's April 5,

2018 letter. The IPR that had been filed against the '550 Patent based on the grounds discussed in Apple's April 5, 2018 letter was denied institution by the PTAB.

22. On June 13, 2018, Plaintiff sent a letter to Mr. Brian Ankenbrandt, Senior Counsel IP Transactions at Apple, notifying Apple regarding the decisions in the '550 IPRs.

23. In July 2018, Plaintiff entered into a patent license agreement with Samsung Electronics.

24. In September 2018, Plaintiff entered into a patent license agreement with Huawei Device.

25. In October 2018, Plaintiff entered into a patent license agreement with LG Electronics.

26. In August and November 2018, Plaintiff met with Apple to discuss a possible license to the Patents-in-Suit. Following the November 2018 meeting, Plaintiff and Apple scheduled a meeting for February 7, 2019. Two days in advance of the February 7 meeting, Apple filed a declaratory judgment action in the Northern District of California seeking a declaration that Apple does not infringe the Patents-in-Suit.

27. Despite the PTAB's denial of institution of the IPRs filed against the Patents-in-Suit, Apple did not take a license to the Patents-in-Suit, did not stop infringing the Patents-in-Suit, and did not provide any detailed analysis to Plaintiff explaining why Apple believed it did not infringe or did not need a license.

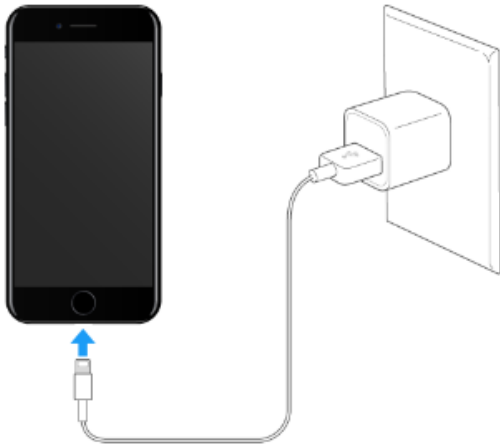
28. After having received notice of the Patents-in-Suit, Apple has continued to make, use, sell, offer for sale, and import into the United States the Accused Products. As an example, Apple has continued to sell, offer to sell and import Accused Products via its stores, its web site <http://www.apple.com>, and through authorized retailers. Apple's making, using, selling, offering to sell and importing of the Accused Products into the United States constitute direct infringement under 35 U.S.C. § 271(a). On information and belief, Apple also directly infringes one or more method claims in the Patents-in-Suit by testing, repairing, and using the Accused Products in the United States.

29. After having received notice of the Patents-in-Suit, Apple has continued to make, use, sell, offer for sale, and import into the United States the Accused Products with knowledge that these Accused Products are a material part of inventions claimed by the Patents-in-Suit and are especially made or adapted for use in an infringement of the Patents-in-Suit. On information and belief, Apple knows that the Accused Products are not a staple article or commodity of commerce suitable for substantial non-infringing use. Apple's actions contribute to the direct infringement of the Patents-in-Suit by others, including customers of the Accused Products, in violation of 35 U.S.C. § 271(c). For example, the Accused Products include battery charging adapters, which are a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, such components are a material part of the invention and are not a staple article or commodity of commerce suitable for substantial non-infringing use.

30. After having received notice of the Patents-in-Suit, Apple has continued to advertise and distribute the Accused Products, offer technical assistance, and publish user manuals, specifications, promotional literature or instructions to customers, partners, and/or end users, advising them to use the Accused Products in a manner that directly infringes the Patents-in-Suit. On information and belief, by such acts, Apple actively induced, and continues to actively induce, direct infringement of the Patents-in-Suit, in violation of 35 U.S.C. § 271(b). For example, Apple's customers who purchase the Accused Products and operate the Accused Products in accordance with instructions provided by Apple, directly infringe one or more claims of the Patents-in-Suit. Apple provides such instructions through, for example, user guides, including user guides located at <https://support.apple.com>, <https://help.apple.com/iphone/10/> and <https://help.apple.com/ipad/10/>. For example, the following instructions are provided by Apple to customers for charging an Apple iPhone:

Charge the battery. Connect iPhone to a power outlet using the included cable and USB power adapter.

NOTICE: If you suspect that liquid may be present in the Lightning connector of iPhone, do not charge iPhone. For more information about exposure to liquid, see [Important handling information](#).



Note: Connecting iPhone to a power outlet can start an iCloud backup or wireless iTunes syncing. See [Back up iPhone with iTunes](#) and [Sync with iTunes](#).

You can also charge the battery by connecting iPhone to your computer, which also allows you to sync iPhone with iTunes. See [Sync with iTunes](#). Unless your keyboard has a high-power USB 2.0 or 3.0 port, you must connect iPhone to a USB 2.0 or 3.0 port on your computer.

<https://help.apple.com/iphone/10/#iph63eccc618>.

31. On information and belief, Apple has further actively induced infringement by remaining willfully blind to its customers' infringement despite believing there to be a high probability its customers, among others, infringe the Patents-in-Suit.

FIRST CLAIM FOR RELIEF

(Infringement of U.S. Patent No. 6,936,936)

32. Fundamental re-alleges and incorporates by reference the allegations of the preceding paragraphs of this Complaint as if fully set forth herein.

33. The '936 Patent, titled "Multifunctional Charger System and Method," was duly

and legally issued on August 30, 2005. A true and correct copy of the '936 Patent is attached as Exhibit A.

34. The '936 Patent names Daniel M. Fischer, Dan G. Radut, Michael F. Habicher, Quang A. Luong, and Jonathan T. Malton as co-inventors.

35. The '936 Patent has been in full force and effect since its issuance. Fundamental owns by assignment the entire right, title, and interest in and to the '936 Patent, including the exclusive right to seek damages for past, current and future infringement thereof.

36. Apple has been, and currently is, directly infringing the '936 Patent by making, using, selling, offering to sell, and/or importing into the United States at least the following products: Apple 1A charging adapter, Apple 2.1A charging adapter and Apple 2.4A charging adapter; iPhone Xs, iPhone Xs Max, iPhone XR, iPhone X, iPhone 8, iPhone 8+, iPhone 7, iPhone 7+, iPhone SE, iPhone 6s, iPhone 6s+, iPhone 6, iPhone 6+, iPhone 5s, iPhone 5c, iPhone 5; iPad 6, iPad Pro 2nd 10.5", iPad Pro 2nd 12.9", iPad 5, iPad Pro 9.7", iPad Pro 12.9", iPad mini 4, iPad mini 3, iPad Air 2, iPad mini 2, iPad Air, iPad 4; iPod Touch 6th Gen, iPod Touch 5th Gen; and Macbook Pro 4th Gen, Macbook 8, Macbook 9, Macbook 10 and Macbook Air 8, and other models that include similar functionality to the extent not licensed to the Patents-in-Suit. Apple's products infringe at least claims 1-3, 13-15, 25-29, 51-52, 55-56, 63-64, 70-71, 84-86, and 94 of the '936 Patent.

37. The identified products include charging adapters that are able to provide power to a mobile device and mobile devices that are configured to receive power from such adapters. As shown in the photo below, the adapter products include a plug unit that can be plugged into an electrical socket to receive energy from the socket.

5W USB Power Adapter

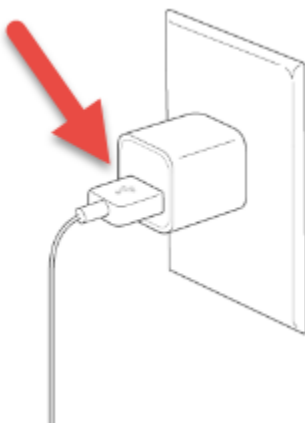


Certification Label

<https://www.apple.com/power-adapters/>

38. The adapter products also include a power converter that regulates energy from the power socket and converts the 100-240v AC voltage to a 5v DC voltage that can be output from the charging adapter.

39. The identified adapter products also include a USB connector that is electrically connected to the power converter and that is able to deliver power to a mobile device through a USB cable.



<https://help.apple.com/iphone/10/#/iph63eccc618>

40. The USB connector is also electrically connected to an identification subsystem

that includes resistors connected to the D+ and D- lines in the adapter. The identification subsystem is configured to generate an identification signal that consists of one of the below highlighted voltage pairs on the D+ and D-:

Voltage on D+ (V)	Voltage on D- (V)	Charging Current (A)	Comments
2	2	0.5	Not in use ¹ . First-generation Apple Chargers
2	2.7	1	1 A Apple Chargers
2.7	2	2.1	2.1 A Apple Chargers
2.7	2.7	2.4	2.4 A Apple Chargers ¹

<https://www.cypress.com/file/134011/download> at 5 (annotation added).

41. As shown above, the voltage pairs are logic high signals on the D+ and D- lines.

42. The identified adapters are sold by Apple with the identified mobile devices, or for use with the identified mobile devices. The identified mobile devices have a power distribution subsystem, which includes a power management chip that is operable to receive energy through a USB connector and to distribute the energy to at least one component in the mobile device.

43. On information and belief, Apple has been, and currently is, inducing infringement of the '936 Patent, in violation of 35 U.S.C. § 271(b), by knowingly encouraging or aiding others to make, use, sell, or offer to sell the Accused Products in the United States, or to import the Accused Products into the United States, without license or authority from Fundamental, with knowledge of or willful blindness to the fact that Apple's actions will induce others, including but not limited to its customers, partners, and/or end users, to directly infringe the '936 patent. Apple induces others to infringe the '936 Patent by encouraging and facilitating others to perform actions that Apple knows to be acts of infringement of the '936 Patent with intent that those performing the acts infringe the '936 Patent.

44. On information and belief, Apple has been, and currently is, contributorily

infringing the '936 Patent, in violation of 35 U.S.C. § 271(c), by selling or offering for sale, in this judicial district and throughout the United States, components that embody a material part of the inventions described in the '936 Patent, are known by Apple to be especially made or especially adapted for use in infringement of the '936 Patent, and are not staple articles of commerce or commodities suitable for substantial, non-infringing use, including at least the Accused Products. Apple's actions contribute to the direct infringement of the Patents-in-Suit by others, including customers of the Accused Products, in violation of 35 U.S.C. § 271(c).

45. As a result of Apple's infringement of the '936 Patent, Fundamental has been damaged. Fundamental is entitled to recover for damages sustained as a result of Apple's wrongful acts in an amount to be determined.

46. In addition, Apple's infringing acts have caused and are causing immediate and irreparable harm to Fundamental.

47. Apple has had actual knowledge of its infringement of the '936 Patent since no later than August 21, 2017. On information and belief, Apple's infringement of the '936 Patent has been and continues to be deliberate and willful, and, therefore, this is an exceptional case warranting an award of treble damages and attorney's fees to Fundamental pursuant to 35 U.S.C. §§ 284-285.

SECOND CLAIM FOR RELIEF

(Infringement of U.S. Patent No. 7,239,111)

48. Fundamental re-alleges and incorporates by reference the allegations of the preceding paragraphs of this Complaint as if fully set forth herein.

49. The '111 Patent, titled "Universal Serial Bus Adapter for a Mobile Device," was duly and legally issued on July 3, 2007. A true and correct copy of the '111 Patent is attached as Exhibit B.

50. The '111 Patent names Daniel M. Fischer, Dan G. Radut, Michael F. Habicher, Quang A. Luong, and Jonathan T. Malton as co-inventors.

51. The '111 Patent has been in full force and effect since its issuance. Fundamental owns by assignment the entire right, title, and interest in and to the '111 Patent, including the exclusive right to seek damages for past, current and future infringement thereof.

52. On information and belief, Apple has been, and currently is, directly infringing the '111 Patent by making, using, selling, offering to sell, and/or importing into the United States at least the following products: Apple 1A charging adapter, Apple 2.1A charging adapter and Apple 2.4A charging adapter, and other models that include similar functionality to the extent not licensed to the Patents-in-Suit. On information and belief, Apple's products infringe at least claims 1-3, 6-8, and 16-18 of the '111 Patent.

53. The identified products are charging adapters that are able to provide power to a mobile device. The products include a plug unit that can be plugged into an electrical socket to receive energy from the socket.

5W USB Power Adapter



<https://www.apple.com/power-adapters/>

54. The products also include a power converter that regulates energy from the power socket and converts the 100-240v AC voltage to a 5v DC voltage that can be output from the charging adapter.

55. The identified products include an identification subsystem in the form of resistors that are connected to the D+ and D- lines in the adapter. The identification subsystem is configured

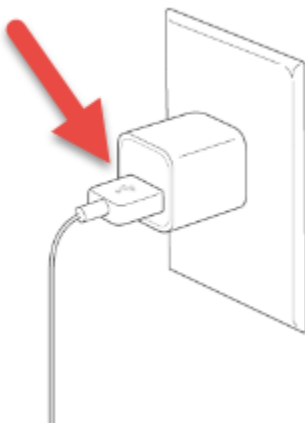
to generate an identification signal that consists of one of the below highlighted voltage pairs on the D+ and D-:

Voltage on D+ (V)	Voltage on D- (V)	Charging Current (A)	Comments
2	2	0.5	Not in use ¹ . First-generation Apple Chargers
2	2.7	1	1 A Apple Chargers
2.7	2	2.1	2.1 A Apple Chargers
2.7	2.7	2.4	2.4 A Apple Chargers ¹

<https://www.cypress.com/file/134011/download> at 5 (annotation added).

56. These voltage pairs indicate to the mobile device that the power socket is not a USB host or hub.

57. The identified products also include a USB connector that is coupled to the power converter through a Vbus line and to the identification subsystem. The USB connector is configured to couple the power output and identification signal to a mobile device, through a USB cable.



<https://help.apple.com/iphone/10/#/iph63eccc618>

58. On information and belief, Apple has been, and currently is, inducing infringement of the '111 Patent, in violation of 35 U.S.C. § 271(b), by knowingly encouraging or aiding others to make, use, sell, or offer to sell the Accused Products in the United States, or to import the Accused Products into the United States, without license or authority from Fundamental, with knowledge of or willful blindness to the fact that Apple's actions will induce others, including but not limited to its customers, partners, and/or end users, to directly infringe the '111 patent. Apple induces others to infringe the '111 Patent by encouraging and facilitating others to perform actions that Apple knows to be acts of infringement of the '111 Patent with intent that those performing the acts infringe the '111 Patent.

59. On information and belief, Apple has been, and currently is, contributorily infringing the '111 Patent, in violation of 35 U.S.C. § 271(c), by selling or offering for sale, in this judicial district and throughout the United States, components that embody a material part of the inventions described in the '111 Patent, are known by Apple to be especially made or especially adapted for use in infringement of the '111 Patent, and are not staple articles of commerce or commodities suitable for substantial, non-infringing use, including at least the Accused Products. Apple's actions contribute to the direct infringement of the Patents-in-Suit by others, including customers of the Accused Products, in violation of 35 U.S.C. § 271(c).

60. As a result of Apple's infringement of the '111 Patent, Fundamental has been damaged. Fundamental is entitled to recover for damages sustained as a result of Apple's wrongful acts in an amount to be determined.

61. In addition, Apple's infringing acts have caused and are causing immediate and irreparable harm to Fundamental.

62. Apple has had actual knowledge of its infringement of the '111 Patent since no later than August 21, 2017. On information and belief, Apple's infringement of the '111 Patent has been and continues to be deliberate and willful, and, therefore, this is an exceptional case warranting an award of treble damages and attorney's fees to Fundamental pursuant to 35 U.S.C. §§ 284-285.

THIRD CLAIM FOR RELIEF

(Infringement of U.S. Patent No. 7,834,586)

63. Fundamental re-alleges and incorporates by reference the allegations of the preceding paragraphs of this Complaint as if fully set forth herein.

64. The '586 Patent, titled "Multifunctional Charger System and Method," was duly and legally issued on November 16, 2010. A true and correct copy of the '586 Patent is attached as Exhibit C.

65. The '586 Patent names Daniel M. Fischer, Dan G. Radut, Michael F. Habicher, Quang A. Luong, and Jonathan T. Malton as co-inventors.

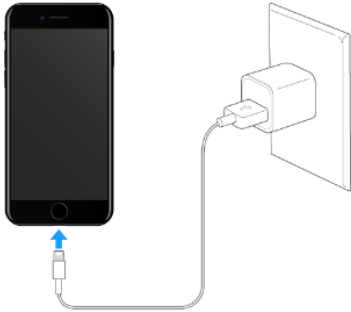
66. The '586 Patent has been in full force and effect since its issuance. Fundamental owns by assignment the entire right, title, and interest in and to the '586 Patent, including the exclusive right to seek damages for past, current and future infringement thereof.

67. Apple has been, and currently is, directly infringing the '586 Patent by making, using, selling, offering to sell, and/or importing into the United States at least the following products: iPhone Xs, iPhone Xs Max, iPhone XR, iPhone X, iPhone 8, iPhone 8+, iPhone 7, iPhone 7+, iPhone SE, iPhone 6s, iPhone 6s+, iPhone 6, iPhone 6+, iPhone 5s, iPhone 5c, iPhone 5; iPad 6, iPad Pro 2nd 10.5", iPad Pro 2nd 12.9", iPad 5, iPad Pro 9.7", iPad Pro 12.9", iPad mini 4, iPad mini 3, iPad Air 2, iPad mini 2, iPad Air, iPad 4; iPod Touch 6th Gen, iPod Touch 5th Gen; and Macbook Pro 4th Gen, Macbook 8, Macbook 9, Macbook 10 and Macbook Air 8, and other models that include similar functionality to the extent not licensed to the Patents-in-Suit. On information and belief, Apple's products infringe at least claims 8-13 of the '586 Patent.

68. The identified products are mobile devices that include a USB interface configured to allow reception of a USB cable through electrical connections in a connector on the device.

Charge the battery. Connect iPhone to a power outlet using the included cable and USB power adapter.

NOTICE: If you suspect that liquid may be present in the Lightning connector of iPhone, do not charge iPhone. For more information about exposure to liquid, see [Important handling information](#).



<https://help.apple.com/iphone/10/#/iph63eecc618>

69. The mobile devices receive power on a Vbus line of the interface, which is operably connected to a charging subsystem that includes a power management chip and/or charging chip.

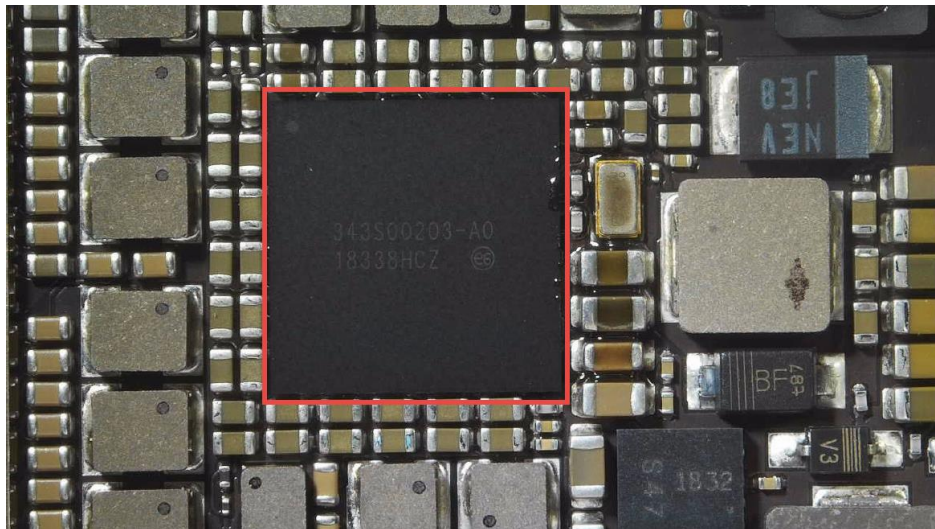


Photo of PMU/Charger in Apple iPad 6

70. The charging subsystem is also connected to a battery and is configured to charge the battery using power supplied to the mobile device on the Vbus.

71. The identified products are capable of detecting an identification signal at a D+ and

a D- data line of the USB interface, the identification signal being different than USB enumeration. Specifically, when connected to an Apple 1A, 2.1A or 2.4A charging adapter, the identified products detect one of the below highlighted voltage pairs on the D+ and D- lines:

Voltage on D+ (V)	Voltage on D- (V)	Charging Current (A)	Comments
2	2	0.5	Not in use ¹ . First-generation Apple Chargers
2	2.7	1	1 A Apple Chargers
2.7	2	2.1	2.1 A Apple Chargers
2.7	2.7	2.4	2.4 A Apple Chargers ¹

<https://www.cypress.com/file/134011/download> at 5 (annotation added).

72. The above voltages are different than USB enumeration, which involves differential signaling and does not involve both the D+ and D- lines being driven to voltages of 2 or more volts.

73. On information and belief, Apple has been, and currently is, inducing infringement of the '586 Patent, in violation of 35 U.S.C. § 271(b), by knowingly encouraging or aiding others to make, use, sell, or offer to sell the Accused Products in the United States, or to import the Accused Products into the United States, without license or authority from Fundamental, with knowledge of or willful blindness to the fact that Apple's actions will induce others, including but not limited to its customers, partners, and/or end users, to directly infringe the '586 patent. Apple induces others to infringe the '586 Patent by encouraging and facilitating others to perform actions that Apple knows to be acts of infringement of the '586 Patent with intent that those performing the acts infringe the '586 Patent.

74. On information and belief, Apple has been, and currently is, contributorily infringing the '586 Patent, in violation of 35 U.S.C. § 271(c), by selling or offering for sale, in this judicial district and throughout the United States, components that embody a material part of the

inventions described in the '586 Patent, are known by Apple to be especially made or especially adapted for use in infringement of the '586 Patent, and are not staple articles of commerce or commodities suitable for substantial, non-infringing use, including at least the Accused Products. Apple's actions contribute to the direct infringement of the Patents-in-Suit by others, including customers of the Accused Products, in violation of 35 U.S.C. § 271(c).

75. As a result of Apple's infringement of the '586 Patent, Fundamental has been damaged. Fundamental is entitled to recover for damages sustained as a result of Apple's wrongful acts in an amount to be determined.

76. In addition, Apple's infringing acts have caused and are causing immediate and irreparable harm to Fundamental.

77. Apple has had actual knowledge of its infringement of the '586 Patent since no later than August 21, 2017. On information and belief, Apple's infringement of the '586 Patent has been and continues to be deliberate and willful, and, therefore, this is an exceptional case warranting an award of treble damages and attorney's fees to Fundamental pursuant to 35 U.S.C. §§ 284-285.

FOURTH CLAIM FOR RELIEF

(Infringement of U.S. Patent No. 8,232,766)

78. Fundamental re-alleges and incorporates by reference the allegations of the preceding paragraphs of this Complaint as if fully set forth herein.

79. The '766 Patent, titled "Multifunctional Charger System and Method," was duly and legally issued on July 31, 2012. A true and correct copy of the '766 Patent is attached as Exhibit D.

80. The '766 Patent names Daniel M. Fischer, Dan G. Radut, Michael F. Habicher, Quang A. Luong, and Jonathan T. Malton as co-inventors.

81. The '766 Patent has been in full force and effect since its issuance. Fundamental owns by assignment the entire right, title, and interest in and to the '766 Patent, including the

exclusive right to seek damages for past, current and future infringement thereof.

82. Apple has been, and currently is, directly infringing the '766 Patent by making, using, selling, offering to sell, and/or importing into the United States at least the following products: iPhone Xs, iPhone Xs Max, iPhone XR, iPhone X, iPhone 8, iPhone 8+, iPhone 7, iPhone 7+, iPhone SE, iPhone 6s, iPhone 6s+, iPhone 6, iPhone 6+, iPhone 5s, iPhone 5c, iPhone 5; iPad 6, iPad Pro 2nd 10.5", iPad Pro 2nd 12.9", iPad 5, iPad Pro 9.7", iPad Pro 12.9", iPad mini 4, iPad mini 3, iPad Air 2, iPad mini 2, iPad Air, iPad 4; iPod Touch 6th Gen, iPod Touch 5th Gen; AirPods; Apple Watch 1st Gen, Apple Watch Series 1, Apple Watch Series 2, Apple Watch Series 3, Apple Watch Series 4; Beats Pill+; and Macbook Pro 4th Gen, Macbook 8, Macbook 9, Macbook 10 and Macbook Air 8, and other models that include similar functionality to the extent not licensed to the Patents-in-Suit. On information and belief, Apple's products infringe at least claims 1-24 of the '766 Patent.

83. The identified products are mobile devices that include D+ and D- lines that are a USB communication path. For example, the D+ and D- lines in the mobile device can be connected to a USB 2.0 port on a Mac computer or PC to communicate data with the Mac or PC.

Connect iPhone to your computer

By connecting iPhone to your computer you can [sync content from your computer using iTunes](#) and [back up iPhone with iTunes](#).

To use iPhone with your computer, you need:

- A Mac with a USB 2.0 or 3.0 port, or a PC with a USB 2.0 port, and one of the following operating systems:
 - OS X 10.9 or later with iTunes 12.5 or later
 - Windows 7 or later with iTunes 12.5 or later
- iTunes, available from the [iTunes download website](#)

Connect iPhone to your computer. Use the included Lightning to USB Cable.



<https://help.apple.com/iphone/10/#/iph3bf4317b>

84. The identified products also have a charging subsystem, which includes a power management chip and/or charging chip, that is enabled to draw current unrestricted by at least one predetermined USB Specification limit. The enablement is in response to the detection of, for example, one of the highlighted voltage pairs below:

Voltage on D+ (V)	Voltage on D- (V)	Charging Current (A)	Comments
2	2	0.5	Not in use ¹ . First-generation Apple Chargers
2	2.7	1	1 A Apple Chargers
2.7	2	2.1	2.1 A Apple Chargers
2.7	2.7	2.4	2.4 A Apple Chargers ¹

<https://www.cypress.com/file/134011/download> at 5 (annotation added).

85. These voltage pairs are an abnormal USB data condition because normal USB data conditions involve differential signaling, and not signals where both the D+ and D- are driven high.

86. On information and belief, Apple has been, and currently is, inducing infringement of the '766 Patent, in violation of 35 U.S.C. § 271(b), by knowingly encouraging or aiding others to make, use, sell, or offer to sell the Accused Products in the United States, or to import the Accused Products into the United States, without license or authority from Fundamental, with knowledge of or willful blindness to the fact that Apple's actions will induce others, including but not limited to its customers, partners, and/or end users, to directly infringe the '766 patent. Apple induces others to infringe the '766 Patent by encouraging and facilitating others to perform actions that Apple knows to be acts of infringement of the '766 Patent with intent that those performing the acts infringe the '766 Patent.

87. On information and belief, Apple has been, and currently is, contributorily infringing the '766 Patent, in violation of 35 U.S.C. § 271(c), by selling or offering for sale, in this judicial district and throughout the United States, components that embody a material part of the inventions described in the '766 Patent, are known by Apple to be especially made or especially adapted for use in infringement of the '766 Patent, and are not staple articles of commerce or commodities suitable for substantial, non-infringing use, including at least the Accused Products. Apple's actions contribute to the direct infringement of the Patents-in-Suit by others, including customers of the Accused Products, in violation of 35 U.S.C. § 271(c).

88. As a result of Apple's infringement of the '766 Patent, Fundamental has been damaged. Fundamental is entitled to recover for damages sustained as a result of Apple's wrongful acts in an amount to be determined.

89. In addition, Apple's infringing acts have caused and are causing immediate and irreparable harm to Fundamental.

90. Apple has had actual knowledge of its infringement of the '766 Patent since no later than August 21, 2017. On information and belief, Apple's infringement of the '766 Patent has been and continues to be deliberate and willful, and, therefore, this is an exceptional case warranting an award of treble damages and attorney's fees to Fundamental pursuant to 35 U.S.C. §§ 284-285.

FIFTH CLAIM FOR RELIEF

(Infringement of U.S. Patent No. 8,624,550)

91. Fundamental re-alleges and incorporates by reference the allegations of the preceding paragraphs of this Complaint as if fully set forth herein.

92. The '550 Patent, titled "Multifunctional Charger System and Method," was duly and legally issued on January 7, 2014. A true and correct copy of the '550 Patent is attached as Exhibit E.

93. The '550 Patent names Daniel M. Fischer, Dan G. Radut, Michael F. Habicher, Quang A. Luong, and Jonathan T. Malton as co-inventors.

94. The '550 Patent has been in full force and effect since its issuance. Fundamental owns by assignment the entire right, title, and interest in and to the '550 Patent, including the exclusive right to seek damages for past, current and future infringement thereof.

95. Apple has been, and currently is, directly infringing the '550 Patent by making, using, selling, offering to sell, and/or importing into the United States at least the following products: Apple 1A charging adapter, Apple 2.1A charging adapter and Apple 2.4A charging adapter, and other models that include similar functionality to the extent not licensed to the Patents-in-Suit. On information and belief, Apple's products infringe at least claims 3-8, and 12-17 of the '550 Patent.

96. The identified products are charging adapters that include a USB VBUS line and D+/D- lines that are a USB communication path. When connected to mobile device, the identified products generate one of the below highlighted voltage pairs on the D+ and D- lines:

Voltage on D+ (V)	Voltage on D- (V)	Charging Current (A)	Comments
2	2	0.5	Not in use ¹ . First-generation Apple Chargers.
2	2.7	1	1 A Apple Chargers
2.7	2	2.1	2.1 A Apple Chargers
2.7	2.7	2.4	2.4 A Apple Chargers ¹

<https://www.cypress.com/file/134011/download>

97. As shown above, the adapters are configured to supply current on the VBUS line of 1A, 2.1A, or 2.4A, which is without regard to the current limits in the USB specification. Furthermore, the identified products supply the above currents without conducting USB enumeration.

98. On information and belief, Apple has been, and currently is, inducing infringement of the '550 Patent, in violation of 35 U.S.C. § 271(b), by knowingly encouraging or aiding others to make, use, sell, or offer to sell the Accused Products in the United States, or to import the Accused Products into the United States, without license or authority from Fundamental, with knowledge of or willful blindness to the fact that Apple's actions will induce others, including but not limited to its customers, partners, and/or end users, to directly infringe the '550 patent. Apple induces others to infringe the '550 Patent by encouraging and facilitating others to perform actions that Apple knows to be acts of infringement of the '550 Patent with intent that those performing the acts infringe the '550 Patent.

99. On information and belief, Apple has been, and currently is, contributorily infringing the '550 Patent, in violation of 35 U.S.C. § 271(c), by selling or offering for sale, in this judicial district and throughout the United States, components that embody a material part of the inventions described in the '550 Patent, are known by Apple to be especially made or especially adapted for use in infringement of the '550 Patent, and are not staple articles of commerce or commodities suitable for substantial, non-infringing use, including at least the Accused Products.

Apple's actions contribute to the direct infringement of the Patents-in-Suit by others, including customers of the Accused Products, in violation of 35 U.S.C. § 271(c).

100. As a result of Apple's infringement of the '550 Patent, Fundamental has been damaged. Fundamental is entitled to recover for damages sustained as a result of Apple's wrongful acts in an amount to be determined.

101. In addition, Apple's infringing acts have caused and are causing immediate and irreparable harm to Fundamental.

102. Apple has had actual knowledge of its infringement of the '550 Patent since no later than August 21, 2017. On information and belief, Apple's infringement of the '550 Patent has been and continues to be deliberate and willful, and, therefore, this is an exceptional case warranting an award of treble damages and attorney's fees to Fundamental pursuant to 35 U.S.C. §§ 284-285.

PRAYER FOR RELIEF

WHEREFORE, Fundamental prays for judgment against Apple as follows:

- A. That Apple has infringed, and continues to infringe, each of the Patents-in-Suit;
- B. That Apple pay Fundamental damages adequate to compensate Fundamental for Apple's infringement of the Patents-in-Suit, together with interest and costs under 35 U.S.C. § 284;
- C. That Apple be ordered to pay pre-judgment and post-judgment interest on the damages assessed;
- D. That Apple be ordered to pay supplemental damages to Fundamental, including interest, with an accounting, as needed;
- E. That Apple's infringement is willful and that the damages awarded to Fundamental should be trebled;
- F. That this is an exceptional case under 35 U.S.C. § 285 and that Apple pay Fundamental's attorney's fees and costs in this action;
- G. That Apple be enjoined from directly and indirectly infringing the Patents-in-Suit;

and

H. That Fundamental be awarded such other and further relief, including other monetary and equitable relief, as this Court deems just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Federal Rule of Civil Procedure 38(b), Fundamental hereby demands a trial by jury on all issues triable by jury.

Dated: February 11, 2019

/s/ J. Mark Mann

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