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A LOOK INSIDE THE APPLE WATCH: INTELLECTUAL PROPERTY RIGHTS AND FUTURE LEGAL BATTLES

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INTRODUCTION

It is not just a watch. It is a masterpiece of intellectual property (IP) rights. It is not just a revolutionary product. It is the next chapter in Apple Inc.'s story¹. Apple believes in technology designed for the wrist (such as a smart-watch), but also in a strong design patent protection strategy. To protect this wearable, as a result of their investment, Apple applied for and received several design patents. Every detail is protected: the drawer where the watches are shown, the bracelet, the "slide-in" interchangeable strap system mechanism, the digital crown, the display, the charger, the retail box, etc. Future innovations will however continue to copy this kind of consumer products and challenge the Courts.

As we all recall, in August 2012, one of the most exciting IP cases, *Apple Inc. v. Samsung Electronics*², took place in California. The so-called *trial of the titans* put certainly away the perception that "practically everyone who has an opinion holds design patents in the lowest esteem of all the different forms of IP protection."³ This litigation between Apple and Samsung Electronics Co., Ltd over the design of smartphones and tablets has gone worldwide but indirectly increased the value of design patents in the modern economy and on the international IP scene.

It is still too early to evaluate whether the smartwatch market will know the same explosion in popularity as smartphones. Indeed, smartphones "are now such a pervasive and insistent part of daily life that the proverbial visitor from Mars might conclude they were an important feature of human anatomy."⁴ The smart wearable technology device market is also rapidly growing.⁵ To compete with their rivals, big tech and fashion actors are trying to effectively manage their intellectual property rights. Taking into account the number of companies involved in this wearable market, as it has been the case in the past with smartphones and tablets, the future of chal-

¹ Apple Keynote, September 9, 2014, <http://www.apple.com/live/2014-sept-event/> (last visited October 1, 2015).

² *Apple Inc. v. Samsung Electronics Co. Ltd. et al*, Case No. C 11-1846 LHK.

³ Michael Hages, *The design of Design Patents* (Aug. 20, 2012), <http://www.core77.com/posts/23228/the-design-of-design-patents-what-every-designer-should-know-about-protecting-your-work-23228>.

⁴ *Riley v. California*, 134 S. Ct. 2473, 2482 (2014).

⁵ According to a Business Insider report, it is estimated that the global wearables market will grow at a compound annual rate of 35% over the next five years. "Smart-watch will be the leading product category and take an increasingly large share of wearable shipments (...) [and] expand to just over 70% of shipments by 2019": T Danova, *The wearables report: Growth trends, consumer attitudes, and why smartwatches will dominate*, Business Insider (Apr. 6, 2015), <http://uk.businessinsider.com/the-wearable-computing-market-report-2014-10#ixzz3WnZl8Qw7>.





lenging IP⁶ cases is predictable. Two months after the launch of the Apple Watch Series 1 (hereafter 'Apple Watch'), this prediction has unfortunately proven to be true. The first case against Apple has already been filed in the United States. The Apple Watch Series 2, the company's second generation smartwatch, has been officially unveiled on September 7, 2016.⁷ So far, no lawsuit has been filed.

In this context, for any company with a game-changing disruptive technology, developing a strong design patent strategy is a fundamental step as it is often the first thing people use to distinguish a product from one company to another and a key element of a wearable product's appeal. It may even be more beneficial to protect every aspect and consideration of a design, sometimes minute details, rather than the prominent part of a product which left room for the copyists or suspiciously similar products of competitors. The assessment of what is appropriate for protection is also a fundamental step before launching a new product. Indeed, just like in the smartphone and tablet markets, competitors are numerous (including Sony, Samsung, Motorola, Pebble, and Huawei), and many existing and alternative firms on the side lines are prepared to enter the market.

This Note examines how a maker of wearable devices, such as Apple, can use different forms of intellectual property rights, as well as other intangible assets, to protect a business product. Three further parts trace the road. Part II briefly explains what a smartwatch is. Part III describes how a company can use intellectual property law in the United States, Europe, and China to protect a wearable device such as a smartwatch. Part IV introduces the first lawsuit involving the Apple Watch. Part V concludes.

⁶ For example, as of 2012, in the smartphone industry, the United States Patent and Trademark Office (USPTO) had issued more than 250,000 smartphone-related patent, constituting 16% of all active U.S. patents; See Daniel O'Connor, One In Six Active U.S. Patents Pertain To The Smartphone, PROJECT DISCO (Oct. 17, 2012), <http://www.project-disco.org/intellectual-property/one-in-six-active-u-s-patents-pertain-to-the-smartphone/>. According to Google's Senior Vice President of Corporate Development and Chief Legal Officer, any individual smartphone may incorporate the vast majority of those 250,000 patented technologies: David Drummond, When Patents Attack Android (Aug. 3, 2011), <https://googleblog.blogspot.com/2011/08/when-patents-attack-android.html>; see also Michael Risch, Software Patents and the Smartphone, PRAWFSBLAWG (Nov. 15, 2012), <http://prawfsblawg.blogs.com/prawfsblawg/2012/11/software-patents-and-the-smartphone.html> (noting the "oft repeated statistic: that there are 250,000 patents that might be infringed by any given smartphone").

⁷ Apple Keynote, September 7, 2016 <http://www.apple.com/apple-events/september-2016/> (last visited Sept. 27, 2016).





II. WHAT IS A SMARTWATCH?

A. Definition

It is a multipurpose wearable device designed to be worn on the wrist, with a touchscreen display that runs computing applications. With a smartwatch, just like with a smartphone, a user can access to news, emails, weather forecasts, sports, a camera, or a global positioning system (GPS) navigation. This device in the future should offer functionality and capabilities similar to those of a smartphone. More globally, smartwatches are part of a new revolution called “wearables”. The potential success of this new wearable is not only the result of a market that’s expanding and growing very fast, it is also thanks to the fact that wearable devices are becoming more accessible and influential in the daily lives of consumers. Today, wearables encompass a large number of devices. Among others, the smartwatch⁸, the Google Glass, GPS tracking devices, the heart rate monitor, smart contact lenses, the contactless wristband, smart shirts, fitness bracelets, etc. and the innovations won’t end there.

At the time of writing, most of the smartwatches are designed to be paired/connected, via Bluetooth for instance, with Apple iPhone products or Android devices (smartphone or tablet) in order to function. They are not interchangeable (yet) and autonomous.

B. The First Apple Watch related patent?

As with every tech companies, many concepts and prototypes make their way to Apple. They however never see the light of day in Apple Stores. The company has been granted many utility and design patents that, unfortunately, will be forever “sleeping” in the patent databases. It may be for strategic reasons or misleading its competitors, or simply because the technology is not mature enough to enter the market. These patent applications are public though and allow readers to examine where the possible development of an invention is going or where a company is investing in.

The first Apple Watch related patent was already filed more than four years ago in August 2011. The patent application became public in February 2013.

⁸ Examples of smartwatches include Sony Smartwatch, Metawatch, Samsung Gear (Gear S, Gear 2, Gear Live), Motorola Moto 360, Pebble Smartwatch, NikeFuel (mostly for runners), LG Watch Urbane (LG G Watch R, LG G Watch), Apple Watch, Huawei Watch, Asus ZenWatch, Olio Model One, etc.



The abstract of the application was straightforward: “A wearable accessory device is disclosed.”⁹ It added, back then, fuel to the Apple Watch rumors.

The figure 1 of the patent application outlined a device in its curled state with a flexible screen worn on the wrist. It was not exactly a wristwatch or the Apple Watch as we know them today. It looks like a slap wrap/bracelet. But in 2011 it was a pretty promising invention, well before other competitors entered in this wearable technology industry. More precisely, the invention was described as “wearable [video] accessory device [that] includes a flexible display coupled to a bi-stable spring.”¹⁰

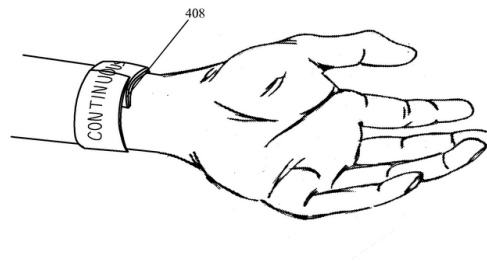


Figure 1

Although the abstract of the patent application was a bit too vague to exactly understand what the invention was describing, the related art provided more details on this apparatus capitalizing on the easily wearable nature of a bi-stable spring:

The slap bracelet consists of layered flexible steel bands sealed within a fabric cover. (...) The slap bracelet has been used primarily as a decorative bracelet; however, other uses have included for example keeping a pant leg away from a bike chain, or even using a slap bracelet covered with reflective tape for providing increased visibility for pedestrians and bikers at night. Perhaps most usefully it is quite easy to wrap around a wrist or leg, and stays conveniently in place.¹¹

⁹ U.S. Patent No. 9,176,530, figs. 5A and 5B (filed August 17, 2011).

¹⁰ *Id.*

¹¹ *Id.*



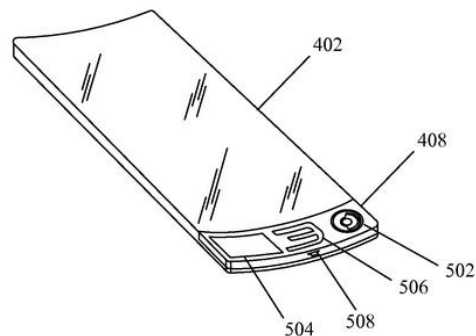


Figure 2

The second figure is more interesting and it describes the accessories of the Apple Watch as it is known today. Apple was already including various components on the device, such as the “kinetic energy”, the fact that the “watch” had to be connected with another device, the battery, etc. However, the current Apple Watch screen is not flat. Here is how the device was described:

(...) It's a view of accessory device and how it appears with the edge to edge display. (...) The flat state has the advantage of showing more of flexible display 402 at once, and therefore might be a preferable state for activities such as parameter initialization or for establishing connections between it and another portable electronic device. The accessory device can contain a sensor which alerts the device as to which state it is in and then changes the user interface to optimize it for that state (...). Individual elements of flexible electronic module 408 are shown on the surface of flexible electronic module 408 for explanatory purposes. Kinetic energy gathering device 502 is shown on the right side of flexible electronic module 408. One of the advantages of having the accessory device on an extremity is that it is an ideal location for gathering kinetic energy. (...). Antenna 506 is for establishing and maintaining the connection between accessory device 400 and the portable electronic device. The antenna can be configured to pass data over WiFi, Bluetooth or any other suitable wireless protocol. Connector 508 allows accessory device 400 to be connected by wire to another electronic device for activities such as charging, performing firmware updates, or even for reconfiguring the device.¹²

¹² U.S. Patent No. 9,176,530, figs. 5A and 5B (filed August 17, 2011).





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In 2016, knowing how the Apple Watch looks like today, it is hard to say whether this was really the first related patent or simply another future wearable device like a smart bracelet.





C. The Apple Watch

The Apple Watch was officially presented at the Keynote on September 9, 2014, in Cupertino at the Flint Center. It is the symbolic place where Steve Jobs introduced Macintosh in 1984 and iMac in 1998. After presenting a series of new products and services, current Apple CEO Tim Cook came back on stage with the memorable Steve Job's signature "One more thing...". It was the first time since the death of Jobs, a sign that the company was finally willing to let the Jobs legacy lie. He then introduced the most personal device Apple has ever created¹³: The Apple Watch.

Apple released in April 2015 its new line of product in three collections: Apple Watch, Apple Watch Sport, and Apple Watch Edition. The company described the products on their website as follows:

*The (...) collection features highly polished stainless steel and space black stainless steel cases. The display is protected by sapphire crystal. And there's a choice of three different leather bands, a link bracelet, a Milanese loop, and a band made from high-performance fluoroelastomer.*¹⁴

In terms of functionality¹⁵, the watch runs a version of iOS, different from its smartphone counterpart, but is not able to make calls from the watch without being connected to a compatible Apple device. But other functionalities are available such as notifications, activity, Siri, Apple Pay.¹⁶

In terms of market share, a recent report from the International Data Corporation Worldwide Quarterly Wearable Device Tracker¹⁷ revealed that the worldwide wearables market increased by 67.2% in the first quarter of 2016. When it comes to smartwatches, Apple came out on top of the smartwatch vendors with 46% market share. Samsung (20.9%), Motorola (10.9%), Huawei (4.7%), Garmin (3.0%), others (14.5%) are far behind.

¹³ Apple Live, <http://www.apple.com/live/2014-sept-event/> (last visited July 15, 2015).

¹⁴ Apple Inc., *Apple Watch*, Apple <https://www.apple.com/watch/apple-watch/> (last visited July 15, 2014).

¹⁵ For more info, see Apple Watch, *Human Interface Guidelines*, <https://developer.apple.com/watch/human-interface-guidelines/> (last visited August 10, 2015).

¹⁶ The Apple Watch features a 38mm-wide, 340 x 272-pixel rectangle-shaped touch which increases to 48mm, 390 x 312p on bigger models, see James Stables, *Apple Watch review* (May 14, 2015), <http://www.wearable.com/apple-watch/apple-watch-review>.

¹⁷ Michael Shirer, *Worldwide Wearables Market Increases 67.2% Amid Seasonal Retrenchment*, According to IDC (May 16, 2016), <http://www.idc.com/getdoc.jsp?containerId=prUS41284516>





III. INTELLECTUAL PROPERTY RIGHTS PROTECTION FOR A SMARTWATCH

A. General considerations

To thrive in today's economy, managing technological innovation better than its competitors is a key aspect to survive, especially in the wearables competitive market. The effective use of the different tools offered by the IP system may undoubtedly give a competitive edge to any company willing to invest in this sector. Indeed, if costumers have come to associate an innovative design with a product, it is most likely the right time to obtain an appropriate legal protection.

Just like an architect needs to draw a plan of a building, the Apple Watch designer's team had to draw up the designs for the watch before commercializing it. The strategic protection developed by Apple represents a valuable example of how IP can protect a revolutionary product such as a smartwatch. But it could also be applied to any other wearables. These design patent applications covering different aspects of the watch overall design may also discourage copyists from infringing or borrowing from these patents as it may quickly involve multiple related patents and increase the potential damages. "A design is hard to define but is easily described."¹⁸

B. Current protection

1. INTRODUCTION

The commercialization of a new innovation, whether it is a product or a process, requires a good analysis about what merits protection. For a wearable technology, such as a smartwatch, almost all the elements may be protected by IP rights.

In the United States, the standards of obtaining a design patent are relatively high compared to copyright (originality) and trademark (distinctiveness) which are easier to satisfy. Indeed, design patents must satisfy the utility patents requirements as well as be ornamental. But there are more capacious than utility design which gives a stronger protection.

¹⁸ Orit Fischman Afori, *Reconceptualizing Property in Designs*, CARDOZO ARTS & ENT. L.J. 1105, 1110 (2008).





A distinction is made, between a “utility patent” and a “design patent”. Broadly speaking, a “utility patent” protects the way an article is used and works (35 U.S. Code §101) *i.e.* functional technologies¹⁹. Utility patents are therefore available for “any new and *useful* process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. 101 (emphasis added). Indeed, the functional features are the proper domain of utility-patent law.²⁰

A “design patent” protects the way an article looks (35 U.S. Code. §171) *i.e.* ornamental²¹ (nonfunctional) design²². According to Section 171, “the protectable scope of design patents does not encompass non-ornamental features”.²³ Unfortunately, the U.S. statute does not define what constitutes a protected “ornamental” design. But “it cannot protect “abstract ideas” or “physical phenomena” like basic shapes or concepts, *Bilski v. Kappos*, 561 U.S. 593, 601 (2010), and there is a well-accepted contrast with unprotected “functional” features, see *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 148 (1989). Although design patents were once available for “useful” product configurations, see *Smith*, 148 U.S. at 677, in 1902 Congress eliminated “the word ‘useful’ as applied to design patents ... and substitut[ed] the word ‘ornamental,’” H.R. Rep. No. 57-1661, at 1 (1902); see Act of May 9, 1902, ch. 783, Pub. L. No. 57-109, 32 Stat. 193.”²⁴

Both design and utility patents “may be obtained on an article if invention resides both in its utility and ornamental appearance.”²⁵ More precisely, a design “consists of the visual ornamental²⁶ characteristics embodied in, or

¹⁹ According to 35 U.S.C. 101, utility patents are available for “any new and *useful* process, machine, manufacture, or composition of matter, or nay new and useful improvement thereof.” (emphasis added).

²⁰ See *Bonito Boats v. Thunder Craft Boats*, 489 U.S. 148 (1989).

²¹ Ornamentality is “determined by the aesthetic, eye-pleasing features of the article not dictated by functional considerations”: Nazli Saka, *The Curious Case of Design Patents* (Nov. 6, 2012), <http://btlj.org/2012/11/the-curious-case-of-design-patents/> ; see also *Trimble Products, Inc. v. W. T. Grant Co*, 283 F.Supp. 707 (1968). According to 35 U.S.C. 171, design patents are available for “any new, original and *ornamental* design for an article of manufacture.” (emphasis added).

²² In addition, the term of protection is shorter for design patents (fourteen years) as compared to utility patents (twenty years); compare 35 U.S.C. § 173 with 35 U.S.C. §154(a)(2). It can also be noted that design patents are much faster and cheaper to obtain than utility patents (on average fourteen months to obtain a design patent in contrast to almost three years for a utility patent); see also Peter Lee and Madhavi Sunder, *Design Patents: Law Without Design*, 17 Stan. Tech. L. Rev. 277 (2013), p. 283.

²³ *Samsung Electronics Co. v. Apple Inc.*, No 15-____, p. 10 (on petition for writ of certiorari) (Samsung Petition)

²⁴ *Id.*

²⁵ USPTO, *Design Patent Application Guide*, <http://www.uspto.gov/patents-getting-started/patent-basics/types-patent-applications/design-patent-application-guide> (last visited Nov. 15, 2015).

²⁶ The U.S. statute does define what constitutes a protected “ornamental” design,





applied to, an article of manufacture. (...) A design patent protects only the appearance of the article and not structural or utilitarian features.”²⁷

Contrary to the difficulty of writing utility patent's claims, a design patent has little writing at all. It relies on “sets of drawing figures that illustrate the design itself and act as both the description and claims of the patent. The only writing in a design patent is usually a short description of what type of product the covered design is for and a listing of the views shown by the figures”.²⁸ Some design patents depict entire products or decorative pattern that can be applied to entire products, while some other design patents cover only a portion or small component of a product.²⁹ These partial design patents use broken lines in the figures/drawings to show (as here) portions of the electronic device and environment that form no part of the claimed design.³⁰ It is understood to be for illustrative purposes only. In other words, the figures are, for practical purposes, the most important part of the application. After all, a picture is worth a thousand words.

Design law in Europe consists of European Union design legislation providing a unitary right for registered (RCD) and unregistered Community designs (UCD).³¹ In contrast to RCDs, UCDs provide a right only to prevent the copying of the design. In other words, independent creative work by a second designer will not infringe the UCD. RCDs, on the other hand, are protected against both systematic copying and the independent development of similar designs.

but it cannot protect “abstract ideas” or “physical phenomena” like basic shapes or concepts.

²⁷ LTC Harms, *The Enforcement of Intellectual Property Rights: A Case Book*, WIPO, 3rd ed., 2012, p. 313.

²⁸ Nazli Saka, *The Curious Case of Design Patents* (Nov. 6, 2012), <http://bitlj.org/2012/11/the-curious-case-of-design-patents/>. For instance, as of 2012, about 6% of all smartphone-related patents are design patents; See Joel Reidenberg et al., *Patents and Small Participants in the Smartphone Industry*, 18 STAN. TECH. L. REV. 375, 394 (2015).

²⁹ *Samsung Electronics Co. v. Apple Inc.*, No 15-____, p. 10 (on petition for writ of certiorari) (Samsung Petition).

³⁰ As the USPTO states in its Manual of Patent Examining Procedure (“MPEP”), “[t]he two most common uses of broken lines are to disclose the environment related to the claimed design and to define the bounds of the claim. Structure that is not part of the claimed design, but is considered necessary to show the environment in which the design is associated, may be represented in the drawing by broken lines. This includes any portion of an article in which the design is embodied or applied to that is not considered part of the claimed design.” MPEP § 1503.02, available at <http://www.uspto.gov/web/offices/pac/mpep/s1503.html>.

³¹ It is governed by Council Regulation (EC) No. 6/2002 of December 12, 2001 on Community designs and national design laws in the 28 EU member states. It is also harmonized by Directive 98/71/EC of the European Parliament and of the Council of October 13, 1998 on the legal protection of designs. Registered Community designs are administered by the European Union Intellectual Property Office in Alicante, Spain.



Key requirements for design protection in Europe are novelty³², individual character³³, and that it constitutes the design of an industrial item. To evaluate these two requirements for registration, the degree of freedom of the designer in developing his design in relation to the specific product it should be taken into account. Protection for a RDC is for up to 25 years, subject to the payment of renewal fees every five years. The UCD lasts for three years after a design is made available to the public and infringement only occurs if the protected design has been copied.

Finally, in China, designs fall under the scope of patent protection. It is essentially the same as in the United States, where protection is allowed for any new, original, ornamental design for an article of manufacture.

The Chinese Patent Act of the People's Republic of China³⁴ is enacted to protect patent rights for "inventions-creations" (Article 1) which is defined in Article 2 as "inventions, utility models and designs". According to the Act, a design is defined as "the shape, pattern, or the combination thereof, or the combination of the color with shape and pattern, which are rich in an aesthetic appeal and are fit for industrial application". The patent Act only provides exclusive use of the aesthetic features of a product as opposed to how the product functions. Contrary to Europe, no protection is offered for unregistered designs. Indeed, in China, a design must have absolute novelty and does not allow a one grace period *i.e.* prior use or publication anywhere in the world will render the design un-patentable. It means that a design that has been published (RCD) and/or benefits from UCD in Europe will not obtain a design patent in China.³⁵ Another difference with Europe, Chinese patent law does not require the design to possess an individual character for a patent grant. for a Chinese design patent application, at most ten similar designs can be included in one application whereas in an RDC the number is not limited. Finally, once granted, a Chinese design patent will last for ten years beginning with the filing date of the application. In

³² Directive 98/71/EC of the European Parliament and of the Council of 13 October 1998 on the legal protection of designs [1998] OJ L 289, Art. 4.

³³ See *Id.*, Art. 5.

³⁴ Patent Law of the People's Republic of China (as amended up to the Decision of December 27, 2008, regarding the Revision of the Patent Law of the People's Republic of China), available at <http://www.wipo.int/edocs/lexdocs/laws/en/cn/cn028en.pdf> (last visited Dec. 12, 2015); see also 2008年12月27日, 中华人民共和国专利法(根据2008年12月27日全国人民代表大会常务委员会《关于修改〈中华人民共和国专利法〉的决定》修正).

³⁵ The only exception is if a Chinese design patent is applied for within six months, the European filing date can be claimed as the "priority filing date", see China IPR SME helpdesk, [Understanding and using China's design patent](http://www.china-iprhelpdesk.eu/sites/all/docs/publications/China_IPR_SME_Helpdesk-Design_Patent_Guide.pdf) (2015), http://www.china-iprhelpdesk.eu/sites/all/docs/publications/China_IPR_SME_Helpdesk-Design_Patent_Guide.pdf (last visited Dec. 12, 2015).





Europe, as mentioned, the RCD can provide 25 years of exclusive use of the design.

The biggest difference between design patents in the U.S. and China is that in the U.S. "design patents must pass a substantive examination, including a review of obviousness and prior art, but in China only a cursory examination is required, which looks into whether the application has been completed properly, drawings and power of attorney are attached, and the like".³⁶

2. THE DESIGN PATENT SERIES IN THE U.S., EUROPE, AND CHINA

From the moment a customer enters into the Apple Store, chooses a product and plays with the digital crown, receives the retail packaging, and leaves the store, numerous IP rights crossed its path. In this part of the article, we will analyze how design patent law, in the U.S., Europe, and China, can be extremely useful in the smartwatch area³⁷.

(a) *The Apple Store*

The customer journey starts at the door of the Apple Store. So does the design patent protection. For example, the flagship Fifth Avenue glass store in NY, Manhattan is protected under U.S. design patent protection.³⁸ The cube ornamental design of the building was designed in part by Apple cofound-

³⁶ Chris Neumeyer, Design Patents in China: Applications, Infringement and Enforcement (May 7, 2013), <http://www.ipwatchdog.com/2013/05/07/design-patents-in-china-applications-infringement-and-enforcement/id=40026/>.

³⁷ Depending on the size of a company (startup, medium, or large) it is advisable to file the application before the launching of the product to ensure that competitors will not introduce an inspired design copying the newest product.

Although some applicants may find it not prudent to disclose an invention before filing a design (or utility) patent application, as their patent rights could be jeopardized, the current IP system provides a one-year grace period for public disclosures.

³⁸ U.S. Design Patent No. D712,067 (filed Oct. 15, 2012).



er Steve Jobs. It remains the most iconic Apple Store around the world.

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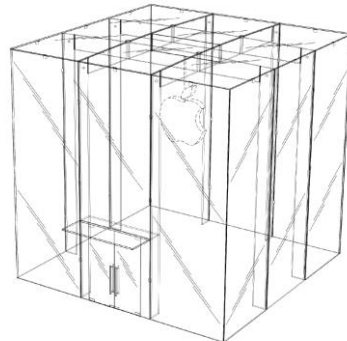


Figure 3

The Company is now involved in the next-generation Jony Ive-inspired design³⁹ that are, of course, protected by design patent.⁴⁰ For instance, in December 2016, Apple was granted a design patent⁴¹ for a "Room" design which represents the next-generation of Apple retail stores.⁴²

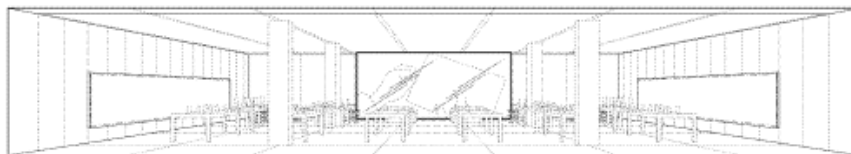


Figure 4

But the IP protection is not ending there. Apple also obtained other legal forms of protection for the Apple Store such as a trademark for the design and layout (the interior) of its retail stores⁴³, a patent for the in-store glass staircase⁴⁴, and a patent for their (advanced) ceiling system.⁴⁵

³⁹ Joe Rossignol, Apple's Beautiful New Store in Brussels Opens to Long Lines and Fanfare (Sept. 19, 2015), <http://www.macrumors.com/2015/09/19/apple-store-brussels-grand-opening-video/>.

⁴⁰ See for instance in China the following design patent applications: IPD Hong-Kong, China No. 1500917.2M001, 1500917.2M002, 1500917.2M003, 1500917.2M004, 1500917.2M005, 1500917.2M006, 1500917.2M007, 1500917.2M008 (filed April 23, 2015).

⁴¹ U.S. Design Patent No. 774,209 S (filed Feb. 9, 2015).

⁴² They also applied for the technical side of their new door system, see U.S. Patent No. 20170002604 (filed June 29, 2016).

⁴³ Apple also obtained a trademark for the design and layout of its retail stores. The mark was described as follows: "The store features a clear glass storefront surrounded by a paneled facade consisting of large, rectangular horizontal panels over the top of the glass front, and two narrower panels stacked on either side of the storefront. Within the store, rectangular recessed lighting units traverse the length of the store's ceiling. There are cantilevered shelves below recessed display spaces along the side walls, and rectangular tables arranged in a line in the middle of the store parallel to the walls and extending from the storefront to the back of the store. There is multi-tiered shelving along the



In a design patent application, the drawings “should contain a sufficient number of views to completely disclose the appearance of the claimed design, i.e. front, rear, right and left sides, top and bottom.”⁴⁶

(b) The Apple Watch presentation tables

To engage and inspire shoppers to buy a new product, Apple also invests in visual merchandising. A clear, inviting, and consistent design reflects the personality of a store but also the branding of a company.

The Apple Store Apple Watch presentation tables⁴⁷, shown below, are protected under design patent.

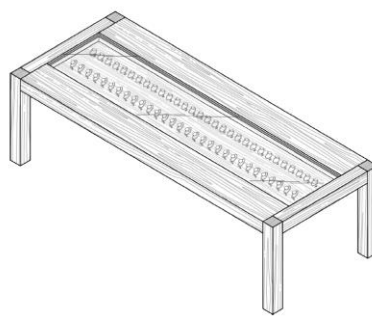


Figure 5

side walls, and a oblong table with stools located at the back of the store, set below video screens flush mounted on the back wall. The walls, floors, lighting, and other fixtures appear in dotted lines and are not claimed as individual features of the mark; however, the placement of the various items are considered to be part of the overall mark.” U.S. Trademark Application Serial No. 85036990 (filed May 12, 2010).

⁴⁴ U.S. Patent No. 7,165,362 fig. 1 (filed July 8, 2003). Apple also obtained a patent for the Apple Store’s glass cylinder shape entryway in Shanghai: U.S. Patent No. 8,544,217 (filed May 13, 2011).

⁴⁵ U.S. Patent No. 9,217,247 (filed Feb. 9, 2014). The abstract is described as follows: “A ceiling system includes a support structure configured to be installed in a ceiling area of a variety of room types. A ceiling supported by the support structure may cover the majority of the ceiling area and may include light sources to light the room. The ceiling may be defined entirely by panels extending continuously from one end of the ceiling to an opposite end of the ceiling, arranged side-by-side with troughs in between. The panels may themselves be the light sources. Alternatively or additionally light sourced may be disposed within the troughs.”

⁴⁶ USPTO, *Design Patent Application Guide*, <http://www.uspto.gov/patents-getting-started/patent-basics/types-patent-applications/design-patent-application-guide> (last visited July 18, 2015).

⁴⁷ IPD Hong-Kong, China No. 1402315.6M001, 1402315.6M002, 1402315.6M003, 1402315.6M004 (filed on Dec. 12, 2014) and 1402316.8M001, 1402316.8M002, 1402316.8M001 (filed on Dec. 12, 2014).



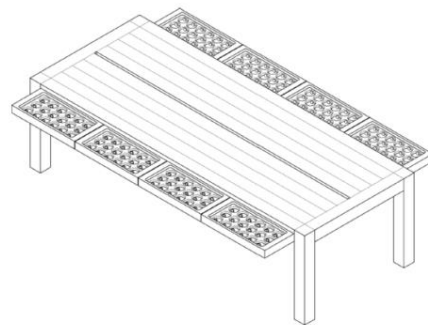


Figure 6

The figures represent how the Apple Watch can be seen when a customer arrives at a presentation table⁴⁸ but also when one opens a drawer⁴⁹.

Apple is even pushing the investment in the legal process a bit further with a design application for the in-Store Apple Watch instructional display, more precisely the test unit with the walk through presentation on the left hand side.⁵⁰

The desire to create a venue with superior visual articulation and to communicate with customers show off Apple's dedication to forward-thinking design. Mid-June 2016, the company has introduced a suite of changes in the shelving unit for the Apple Watch Sports bands with this new design patent application in China.

⁴⁸ A utility patent has also been filed for these advanced tables that allow hidden (pop-up) power and data ports to be exposed with a simple hand gesture. These ports can be concealed when not in use. This table having electrical ports for supplying power or data is explained in the detailed description of the patent application as follows: "when a specific signal (e.g., hand motion signal, proximity signal, RFID (radio-frequency identification) signal, fingerprint match signal, and/or weight threshold signal, etc.) is detected by the sensor, the motor may move the power and/or data ports between the concealed position and the accessible position. Such signals may be transmitted over a wired network (e.g., as direct electrical signals) and/or a wireless network (e.g., as radio signals)", see U.S. Patent Application No. 20150320203 (filed Nov. 12, 2015).

⁴⁹ IPD Hong-Kong, China No. 1402316.8M001, Perspective view 2 in a second state (filed on December 12, 2014).

⁵⁰ IPD Hong-Kong, China No. 1500539.0M001, top front perspective view (filed March 02, 2015).



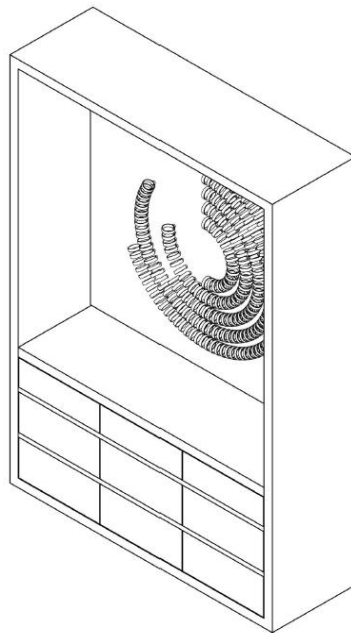


Figure 7

Once the watches are displayed, in order to avoid issues when defending wearable technology, Apple also protected the heart of their technology, the ornamental looks of the Apple Watches.

(c) The Apple Watch band and screen

The band is without any doubt an important accessory of a watch. Although it was not the first design patent that Apple filed for, all of them are now protected.

On March 17, 2015, Apple obtained a design patent covering for the surface of the Apple Watch covered by the design patent application.⁵¹ On figure 6, the band is clearly identified showing how it can be used for a watch. Figure 7 shows other views of the band.

⁵¹ U.S. Design Patent No. D724,469 fig. 3, 4, and 9 (filed Aug. 11, 2014).



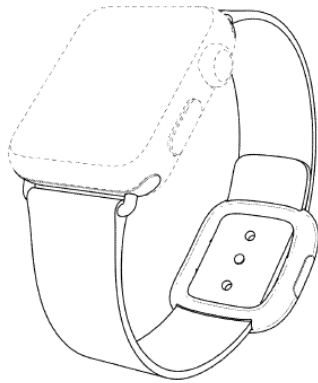


Figure 8

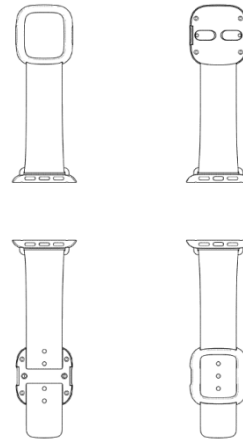


Figure 9

Following this first design covering the Apple watch band, Apple was granted on April 21, 2015, a design patent for the main three cover Apple Watch bands: the link bracelet,⁵² the sport band,⁵³ and the modern buckle.^{54,55}

The figures below represent different views of the link bracelet design patent, namely a perspective view (figure 8) and a rear and left side view (figure 9).

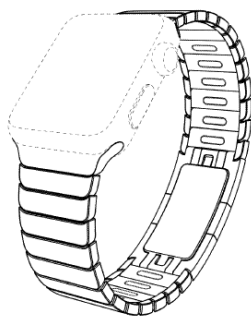


Figure 10

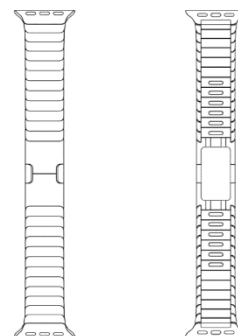


Figure 11

⁵² U.S. Design Patent No. D727,199 fig. 3, 4, and 9 (filed Aug. 11, 2014); IPD Hong-Kong, China No. 1500609.9 (filed March 09, 2015).

⁵³ U.S. Design Patent No. D727,197 fig. 3, 4, and 9 (filed Aug. 11, 2014). The Apple Watch Sport design has also been protected in China: IPD Hong-Kong, China No. 1500612.5 (filed March 09, 2015).

⁵⁴ U.S. Design Patent No. D727,198 fig. 3, 4, and 9 (filed Aug. 11, 2014). IPD Hong-Kong, China No. 1500608.7 (filed March 9, 2015).

⁵⁵ For the Milanese loop band, see IPD Hong-Kong, China No. 1500610.1 (filed March 9, 2015).



Apple applied for the same design concerning the sport band with a perspective view (figure 10) and a rear and left side view (figure 11).

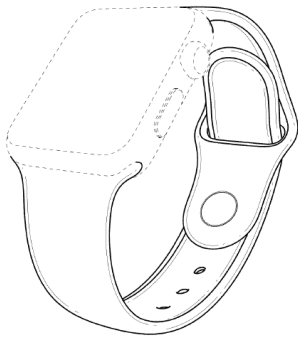


Figure 12

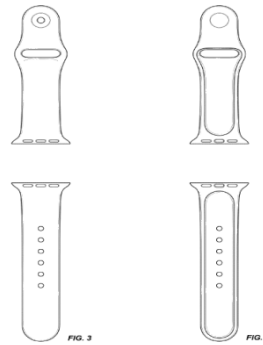


Figure 13

The same filing method was also applied for the modern buckle:

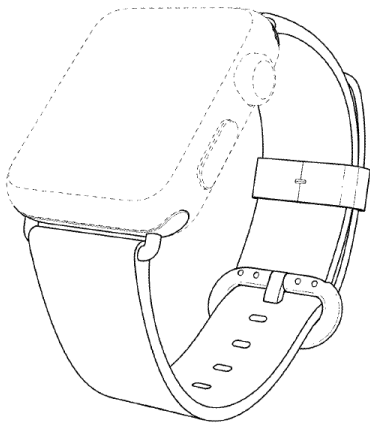


Figure 14

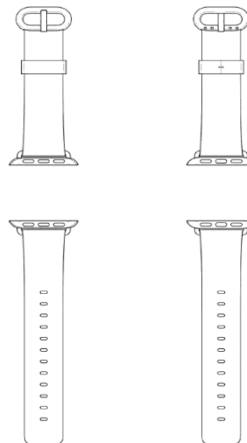


Figure 15

On June 9, 2015, Apple was also granted an ornamental design for the leather loop Apple Watch Band.⁵⁶

⁵⁶ U.S. Design Patent No. D 731,346 fig. 3, 4, and 9 (filed Aug. 11, 2004).



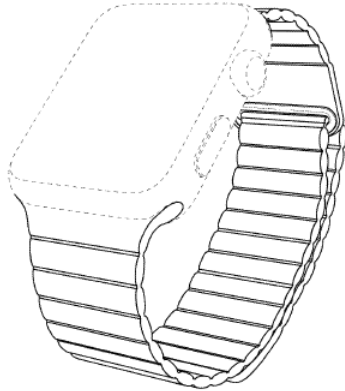


Figure 17

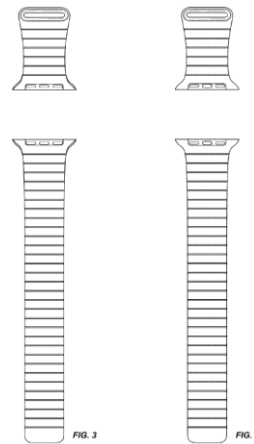


Figure 16

Concerning the bands, the U.S. Patent & Trademark Office also published a (utility) patent application revealing how Apple invented these bands. As design patents are limited to non-functional subject matter, this band invention could have not, of course, be captured/pictured by a design patent application. Interestingly, the patent describes how the woven fabric band could be formed in any shape having a variety of dimensions;” such as a purse, a bracelet or other such article of clothing.”⁵⁷ It is not excluded that the iPhone maker is working on other accessories.

On June 23, 2015, Apple was granted a design patent covering the Apple Watch’s Modern Buckle (D732,416⁵⁸):

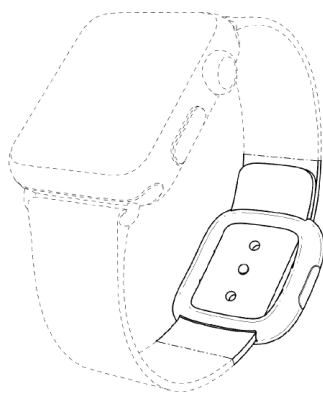


Figure 18

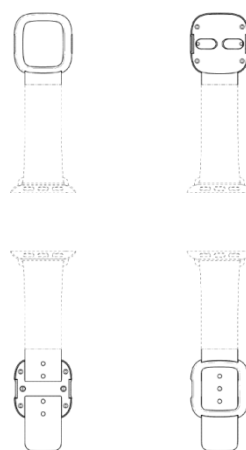


Figure 19

⁵⁷ U.S. Patent No. 2015/0174854 (filed Dec. 19, 2014).

⁵⁸ U.S. Design Patent No. D732,416 fig. 9 and 10 (filed Sept. 8, 2014).



Other new U.S. design patents were also granted in May 2016 for several bands.⁵⁹

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On May 5, 2015, Apple obtained a design patent covering all aspects of the outer design and form factor.⁶⁰ It is perhaps the most important design patent as it covers the most visible part of the watch but also the screen where notifications will be displayed.⁶¹

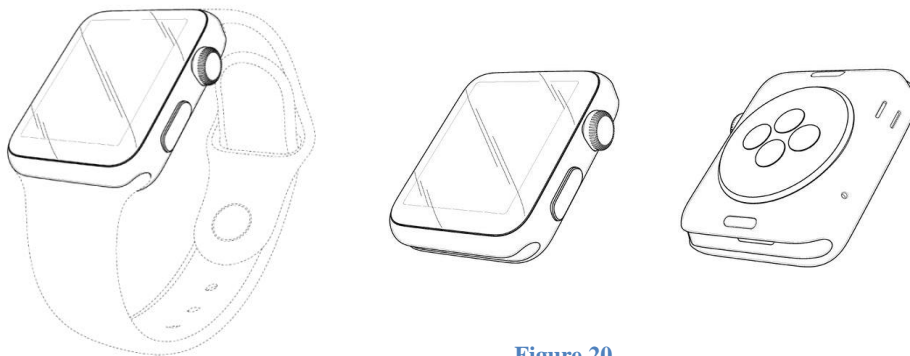


Figure 20

Figure 21

In June, still in China, Apple obtained a design patent about the Apple Watch display.⁶² This patent goes a bit more in details than the U.S. design patent covering the outer design and form factor as it describes the “details” of the Apple Watch’s display.

⁵⁹ U.S. Design Patent No. D756,825, U.S. Design Patent No. D756,824, No. D756,823, No. D756,822 (all filed March 6, 2015).

⁶⁰ U.S. Design Patent No. D728,624 fig. 1, 2, and (filed Aug. 11, 2014); IPD Hong-Kong, China No. 1500623.8M001 (filed March 9, 2015).

⁶¹ Apple has also been granted a design patent for the rounded corners of the Apple Watch : U.S. Design Patent No. D 760,716 (filed Mar. 6, 2015).

⁶² IPD Hong-Kong, China No.1500372 fig. perspective view 1, 2, and rear view (filed Feb. 11, 2015).



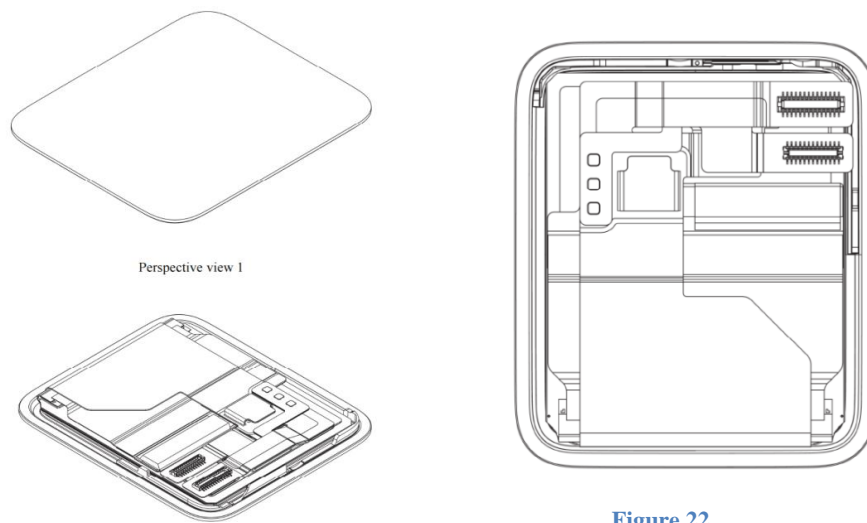


Figure 22

Figure 23

(d) *The "slide-in" interchangeable strap system mechanism*

In the United States, the first design patent for the Apple Watch was filed two months after the official presentation in November 2014. The publication of the design patent application, which is held in the meantime in confidence by the USPTO, occurred a few months later, on March 10, 2015, when Apple was granted a design patent for an "ornamental design for an electronic device."⁶³

These figures below represent different views of the design patent, more specifically the "slide-in" interchangeable strap system mechanism. As design patent applications are by their nature visual; the design shown in drawings is the most important element of the application. The figure 22 is a bottom rear perspective reference view of the Apple Watch showing the design and how it may be used.

⁶³ U.S. Design Patent No. D724,103 fig. 2, and 8 (filed Nov. 24, 2014).



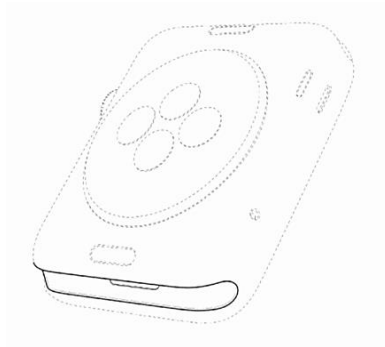


Figure 25

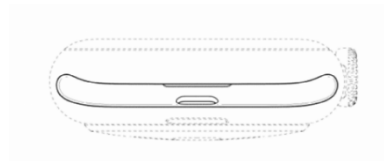


Figure 24

(e) *Apple Watch band attachment*

With this application, the patent design goes a bit deeper in the scope of protection. It is an element that the customer will barely notice but still an important part of the watch.

On April 28, 2015, Apple was granted a design patent for the Apple Watch band attachment.^{64,65} This part of the band also appeared in the design patents previously described. Obtaining several applications for what might be considered as a “detail” of a product is often done to increase the overall value of it but also to make sure that the product is protected across all reasonably-possible variations.⁶⁶ Contrary to utility patents, design patents can be tailored to include what a company believes are essential elements of a design, such as this band attachment.

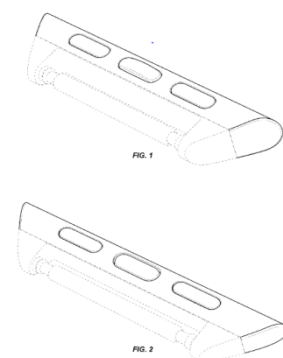


Figure 26

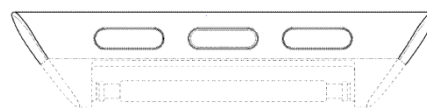


Figure 27

⁶⁴ U.S. Design Patent No. D727,787 fig. 1 and 2 (filed Sept. 8, 2014).

⁶⁵ In China, Apple obtained a design patent for a “link for band” that looks like the Apple Watch band attachment previous design: IPD Hong-Kong, China No. 1500618.8 (filed March 9, 2015).

⁶⁶ See also for instance the design patent for the “link for band”: IPD Hong-Kong, China No. 1500618.8 (filed March 09, 2015).



(f) *The digital crown*

In China, Apple also obtained a design patent for the digital crown.⁶⁷ Unlike U.S. patent applications, most of the Chinese design patent applications are composed of pictures which makes it harder to obtain relevant information about the design of the crown.

(g) *The Apple Watch packaging and charger*

The customer journey is not entirely over. So is the design patent protection. After the Apple Watch was entirely legally protected, Apple also obtained several design patents for the Apple Watch retail packaging. The unique elegance packaging design has also always been part of the customer experience. Each product comes in its own unique subtle simplicity design, sharing common themes but in a different shape. The design application⁶⁸ below illustrates the inside of a retail box for the device.

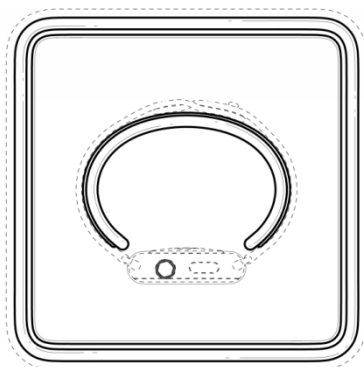


Figure 29

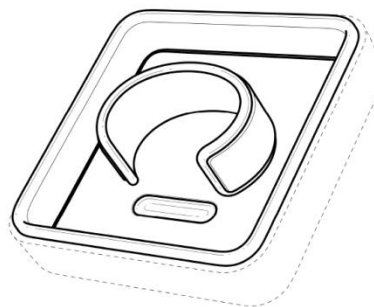


Figure 28

The square format box is designed to appear like “fancy” as it comes from a jewelry shop. Inside, the watch is wrapped around a C-shaped that protects the watch during storage or traveling. On top, the apple logo and “WATCH” (see below) are debossed with accuracy. The Apple Watch Sport, the cheapest model in the collection, is presented in a white long rectangular box, with a shaped vacuum formed insert, holding the watch flat, but bigger than the ‘classic’ box. The design patent application hereun-

⁶⁷ IPD Hong-Kong, China No. 1500623.8M002 (filed March 9, 2015).

⁶⁸ IPD Hong-Kong, China No. 1500540.2M005, perspective view and top front perspective view (filed March 02, 2015).



der (figures 29 and 30) represents the most recent packaging related to the Apple Watch Sport.⁶⁹

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Figure 30

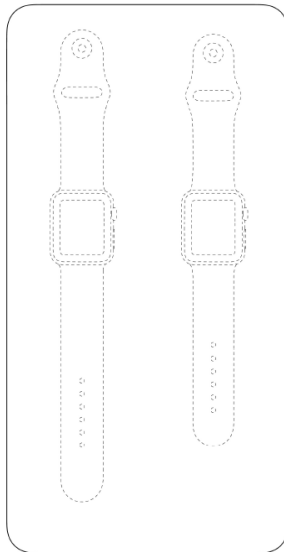
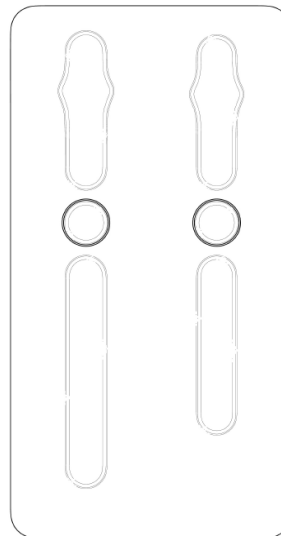


Figure 31



Most of the time, with every new product of Apple, comes a new charger. The smartwatch is not an exception. On June 5, 2015, the Intellectual Property Department (IPD) awarded Apple a design patent for the charger as described below.⁷⁰ On the left side, the figure describes a reference view of the charger with some broken lines showing portion of the device that forms no part the claimed design. On the right side, the figure represents a closer perspective view of the charger design patent.

⁶⁹ IPD Hong-Kong, China No. 1600420.8 figs. front views (filed March 11, 2016).

⁷⁰ IPD Hong-Kong, China No. 1500356 fig. reference and perspective view 1 (filed Feb. 11, 2015).



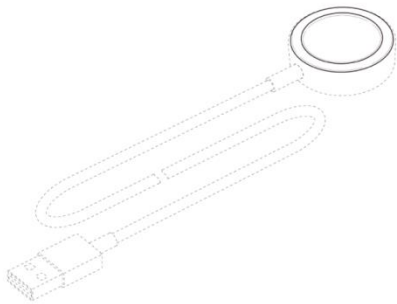


Figure 33

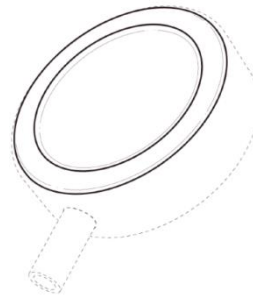


Figure 32

The figure below represents the charger as filed in China with the Apple Watch as an accessory:

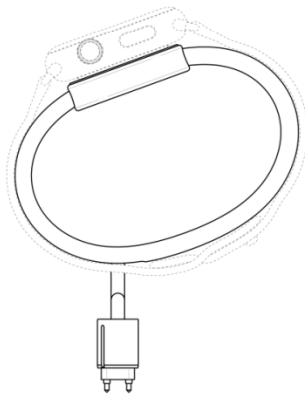


Figure 34

(h) The interfaces for clocks, apps, and wallpapers

In late August 2015, Apple has been granted more than 50 design patents from the Intellectual Property Department Hong-Kong Office covering several graphical user interfaces (GUIs) of the Apple Watch. GUIs are the visual elements (e.g. icons, screen layout) that consumers use every day on all types of electronic devices with a display screen (such as a smartphone, smartwatch, a tablet, a laptop). The growth of wearable devices with more and more intuitive user interfaces may be the reason why identification and protection of GUIs are growing around the world.⁷¹



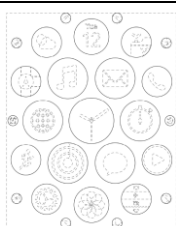

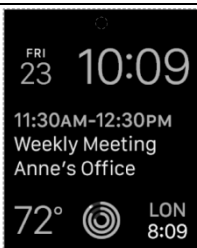

The State Intellectual Property Office in China only amended the patent examination guidebook regarding the patentability of GUIs on May 1, 2014.

⁷¹ Thomas Dubuisson, *IP protection for graphical user interfaces in the EU, US and China*, Journal of Intellectual Property Law & Practice, 2015/10, p. 767-774.



This may explain why now Apple is massively protecting their GUIs over there. However, these patents are not very detailed as they mostly represent a series of simple photos and/or line-art graphics of what was actually registered.⁷²

For example, Apple obtained a GUI for the following design patents⁷³:

| | | |
|---|--|---|
|  <p>1500548.9M001 (front view)</p> |  <p>1500548.9M006</p> |  <p>1500548.9M039</p> |
|  <p>1500548.9M017</p> |  <p>1500548.9M025</p> |  <p>1500548.9M045</p> |

⁷² Although these design patents have been filed at the same time of other Apple Watch design patents described before, they all entered the Register on August 28, 2015.

⁷³ IPD Hong-Kong, China No. 1500548.9M001, 1500548.9M002, 1500548.9M003, 1500548.9M004, 1500548.9M005, 1500548.9M006, 1500548.9M007, 1500548.9M008, 1500548.9M009, 1500548.9M010, 1500548.9M011, 1500548.9M012, 1500548.9M013, 1500548.9M014, 1500548.9M015, 1500548.9M016, 1500548.9M017, 1500548.9M018, 1500548.9M019, 1500548.9M020, 1500548.9M021, 1500548.9M022, 1500548.9M023, 1500548.9M024, 1500548.9M025, 1500548.9M026, 1500548.9M027, 1500548.9M028, 1500548.9M029, 1500548.9M030, 1500548.9M031, 1500548.9M032, 1500548.9M033, 1500548.9M034, 1500548.9M035, 1500548.9M036, 1500548.9M037, 1500548.9M038, 1500548.9M039, 1500548.9M040, 1500548.9M041, 1500548.9M042, 1500548.9M043, 1500548.9M044, 1500548.9M045, 1500548.9M046, 1500548.9M047, 1500548.9M048, 1500548.9M049, 1500548.9M050, 1500548.9M051, 1500548.9M052, 1500548.9M053, 1500548.9M054, 1500548.9M055, 1500548.9M056, 1500548.9M057, and 1500548.9M058 (all filed March 02, 2015).





3. OTHER FORMS OF INTELLECTUAL PROPERTY RIGHTS

A well “designed” design patent protection strategy involves choices about the way designs patent can support the business of a company. Indeed, it is relatively expensive to obtain a protection for every aspect of a new product. But an unprotected invention may lead to an uncertain future income too.

However, not all the aspects, details, or elements of a new product/invention, such as a wearable, are falling under the scope of design patent protection. In this part of the article, a brief summary of the other forms of IP used by Apple to protect the Apple Watch will be provided. Certain aspects of the Apple Watch may also be protected under trade secrets laws and regulations⁷⁴ or other intangible assets, such as licenses or business relationships.

(a) *Trademark protection*

Trademarks signs can consist of words, logos, icons, names and colors, as well as any other means of identifying commercial origin such as the shape of the products and their packaging. Apple developed a strategy to secure the words, icons, and logo related to the Apple Watch.

(i) *In the U.S.*

Apple obtained a trademark⁷⁵ for the literal elements “Apple Watch”. The mark consists of standard characters without claim to any particular font style, size, or color in Class 14⁷⁶ of the Nice Classification.⁷⁷ In other words, Apple shall now have the exclusive right to prevent third parties without Apple’s consent from using in the course of a trade identical or similar signs (Apple Watch) for the goods mentioned in the Class 14 where such use would result in a likelihood of confusion.

⁷⁴ For instance, in Europe, as part of the Europe 2020 strategy, a.k.a. Innovation Union, trade secrets are about to get unified protection on European level; see *Directive of the European Parliament and of the Council on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure*, COM/2013/0813 final - 2013/0402.

⁷⁵ U.S. Trademark Application No. 4783437 (filed Sep. 09, 2014).

⁷⁶ The list of the products in Class 14 were described as follows: “Horological and chronometric instruments; watches; timepieces; chronographs for use as timepieces; chronometers; watchstraps; watch bands; cases for watches, and horological and chronometric instruments; parts for watches, and horological and chronometric instruments.”

⁷⁷ The International Classification of Goods and Services for the Purposes of the Registration of Marks was established by the Nice Agreement Concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks (as amended on September 28, 1979).



Apple also obtained a trademark for the word marks “WatchOS”⁷⁸, the mobile operating system for Apple Watch, and “ [Apple’s logo] Watch”⁷⁹ The later consists of the design of an apple with a bite removed (the classic logo as it is known today) and the word “WATCH” (see below). It was also obtained in Class 14 of the Nice classification.



Figure 35

In order to protect their luxury products, the Edition models, with their 18k gold cases, Apple also applied for a figurative trademark “Apple Watch Edition”. The mark also consists of the design of an apple with the literal elements “Watch Editions” for which protection has been obtained in Class 14 of the Nice Classification.⁸⁰

The trademark for the “Activity” App icon, the fitness tracking element of the Apple Watch that has three targets: Move, Exercise and Stand, has also been granted to Apple in Class 09.⁸¹

(ii) In Europe

Apple obtained a trademark⁸² but, this time, for the Apple Watch App icon that comes with the iPhone. The app assists the user to set up the Apple Watch by pairing it with the iPhone. As mentioned in the brief definition, icons can be protected under trademark law. Knowing that today seven out of every eight minutes on mobile devices is spent within apps,⁸³ protecting such an asset may therefore give a competitive advantage if competitors are also investing in this area.⁸⁴ The trademark was filed in Classes 9, 10, and 14 of the Nice Classification.⁸⁵

⁷⁸ U.S. Trademark Application No. 86549154 (filed Feb. 27, 2015).

⁷⁹ U.S. Trademark Application No. 4783440 (filed Sep. 10, 2014).

⁸⁰ U.S. Trademark Application No. 4,852,670 (filed Jan. 23, 2015).

⁸¹ U.S. Trademark Application No. 4, 976, 692 (filed Aug. 26, 2015).

⁸² E.U. Trademark Application No. 014525761 (filed Sep. 03, 2015).

⁸³ A Lipsman, *The U.S. Mobile App Report, ComScore* (Aug. 21, 2014), <http://www.comscore.com/Insights/Presentations-and-Whitepapers/2014/The-US-Mobile-App-Report>; Google Europe Blog, *The search for harm* (April 15, 2015), <http://googlepolicyeurope.blogspot.nl/2015/04/the-search-for-harm.html>.

⁸⁴ As of July 2015, Android users have been able to choose between 1.6 million apps. Apple's App Store has remained the second-largest app store with 1.5 million available apps, while “only” 400,000 apps are available in the Amazon Appstore: Statista, *Number*





Figure 36

Before Apple's annual big product event on March 21, 2016,⁸⁶ several other trademarks have been filed. The Apple Watch did not escape the "tradi-

of apps available in leading app stores as of July 2015, Statista <http://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/> (last visited Nov. 25, 2015).

⁸⁵ In Class 9 for : "Computers; computer peripherals; computer hardware; hand held computers; tablet computers; laptop computers; handheld digital electronic devices capable of providing access to the Internet and for the sending, receiving, and storing of telephone calls, electronic mail, and other digital data; wearable computer peripherals; wearable computer hardware; peripherals for mobile telecommunication devices; wearable digital electronic devices capable of providing access to the internet, for sending, receiving and storing of telephone calls, electronic mail, and other digital data; radios, radio transmitters, and receivers; earphones, headphones; audio speakers; microphones; audio components and accessories; network communication apparatus; electronic communication equipment and instruments; telecommunications apparatus and instruments; telephones; mobile phones; wireless communication devices for voice, data or image transmission; cables; apparatus for data storage; chips; cameras; batteries; televisions; television receivers; television monitors; set top boxes; computer software; computer software for use on wearable and handheld mobile digital electronic devices and other consumer electronics; software for setting up, configuring, operating and controlling mobile and wearable devices, mobile phones, computers, and computer peripherals; application development software; computer application software for mobile phones, mobile and wearable devices and computer peripherals; electrical and electronic connectors, couplers, wires, cables, chargers, docks, docking stations, interfaces, and adapters for use with all of the aforesaid goods; covers, bags and cases adapted or shaped to contain computers, computer peripherals, computer hardware, hand held computers, tablet computers, laptop computers, mobile phones, and wearable computer peripherals; Health, fitness, exercise, and wellness sensors, monitors and displays"; in Class 10 for : "Medical apparatus and devices"; and in Class 14 for : "Horological and chronometric instruments; watches; clocks; timepieces; chronographs for use as timepieces; chronometers; watch straps watch bands; cases for watches, clocks, and horological and chronometric instruments; parts for watches, clocks, and horological and chronometric instruments; jewelry".

⁸⁶ Apple Keynote, March 21, 2016, <http://www.apple.com/apple-events/march-2016/> (last visited March 14, 2016).



tion". This figurate trademark "Made for Apple Watch"⁸⁷ (see below) filed under the "classical"⁸⁸ International Classes 9, 10 and 14 is likely to be seen on new Apple watch's product and derivatives.



Figure 37

(iii) *In China*

The American multinational technology company also filed for the Apple Watch App trademark icon in China.⁸⁹ Contrary to the European one, the application falls under design law in the Republic of China. The icon, animated graphical user interface and graphical user interface for display screen or portion thereof application covers Classes 9 and 14 of the Locarno Classification.

(b) *Utility patents protection*

(i) *In the U.S.*

Several utility patents have also been granted to Apple concerning the Apple Watch. This article will profile some of the most interesting innovations but as with all of these types of lists, the criteria used for inclusion on this section is subjective.

One of the first utility patents related to the Apple Watch concerns a biometric authentication system/ID system just like the Touch ID, Apple's fingerprint recognition feature.⁹⁰ The patent application for a biometric

⁸⁷ E.U. Trademark Application No. 015087059 (filed Feb. 8, 2016).

⁸⁸ On August 4, 2016, Apple filed for a new European union trademark covering the figuratively styled "Made for Apple Watch" as pictured below. Apple filed their trademark under a new International Class 28 compared to the original filing Apple made back in February, which covers toys and sporting goods, such as games and playthings; gymnastic and sporting articles not included in other classes; see E.U. Trademark Application No. 015720428 (filed Aug. 4, 2016).

⁸⁹ IPD Hong-Kong, China Trademark No. 1501922.3M001 (filed Sept. 1, 2015). For other icons of the Apple Watch, see IPD Hong-Kong, China Trademark Nos. 1501922.3M002; 1501922.3M003; and 1501922.3M004 (filed Sept. 1, 2015).

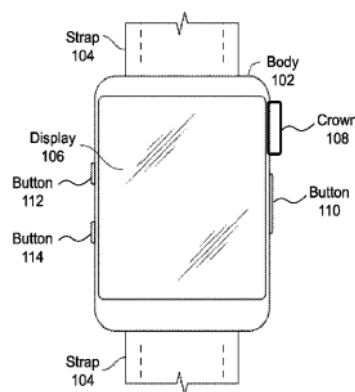
⁹⁰ For another example of Apple Patent International Application, see Patent International Application No. PCT/US2014/022651 (filed March 10, 2014) for an Apple



identification is entitled: “user identification system based on plethysmography”.^{91,92}

Apple also applied for the closest thing the Apple Watch has to a home button or to the visual appearance of conventional watches: the digital crown; also described as a “tactile switch for an electronic device”.⁹³ As explained in the patent background in August 2014, electronic devices reduce in size, making therefore more desirable to have fewer input buttons or devices, without reducing functionality or the number of input types that can be used by a user to provide information to a device.⁹⁴ One can use the Digital Crown to control slider bars like volume and font size, the user interface can be scrolled or scaled in response to a rotation of the crown, or to zoom into pictures and maps.

The tone may have already change with a patent application filed in June 2016 showing the introduction of two new touch-sensitive buttons on the left side of the Apple Watch (buttons 112 and 114). On the right side, the current digital crown and the side button 110, Apple Watch's only control mechanisms are also represented.



According to another patent application⁹⁵ also filed in June 2016, Apple is planning on adding a front-facing camera to the second-generation Apple Watch appearing to support the inclusion of a selfie camera - a front-facing stills camera, intended for but not necessarily one that's capable of FaceTime video. The patent's description notes that “camera #229 can include, e.g., a compact digital camera that includes an image sensor such as a CMOS sensor and optical components (e.g. lenses) arranged to focus an

Watch band that is magnetic based.

⁹¹ This word can be defined as « a device for measuring and recording changes in the volume of the body or of a body part or organ” <http://dictionary.reference.com/browse/plethysmograph> (last visited Nov. 5, 2015).

⁹² Patent International Application No. PCT/US2013/078379, fig. 1 (filed Dec. 30, 2012).

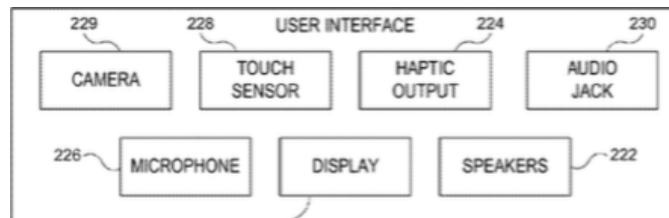
⁹³ U.S. Patent No. 20150041289 A1 (filed Aug 8, 2014).

⁹⁴ U.S. Patent No. 20150041289 A1 (filed Aug 8, 2014).

⁹⁵ U.S. Patent No. 20160174025 A1 (filed June 16, 2016).



image onto the image sensor, along with control logic operable to use the imaging components to capture and store still and/or video images".⁹⁶



This block diagram represents a simplified version of the Apple Watch. In other embodiments, Apple notes in the patent description that "the camera 229 can be disposed on the front surface of (...) [Apple Watch] face, e.g., to capture images of the user. Zero, one, or more cameras can be provided, depending on implementation."⁹⁷

Still in the U.S., a patent application for a "wrist-worn electronic device and methods therefor" was also granted in July 2014.⁹⁸ The patent explains, among others, Apple's use of gestures in relation to "notifications." It was one of the patents adding, at that time, speculation regarding the Apple Watch.

Finally, a patent was granted to Apple for a "motion-detected tap input".⁹⁹ As shown in the images below and explained in the claims, "the first device is a smartphone, while the second device is a watch that communicatively couple to the first device (e.g., through a Bluetooth connection). There is a detection of an external event on a first device, receiving tap inputs on a second device, and performing operations on the first device in response to the tap inputs".¹⁰⁰

For example, this figure illustrates the reception of a phone call on the phone. Then, in response to this phone call, a tap detector on the watch is notified to detect taps, by an operation initiation processor on the phone.¹⁰¹

⁹⁶ U.S. Patent No. 20160174025 A1, fig. 2 (filed June 16, 2016).

⁹⁷ U.S. Patent No. 20160174025 A1, fig. 2 (filed June 16, 2016).

⁹⁸ U.S. Patent No. 8,787,006 (filed Jul. 20, 2011).

⁹⁹ See also U.S. Patent No. 20150205379, fig. 16 (filed April 4, 2014).

¹⁰⁰ See also U.S. Patent No. 20150205379, fig. 16 (filed April 4, 2014).

¹⁰¹ Id.



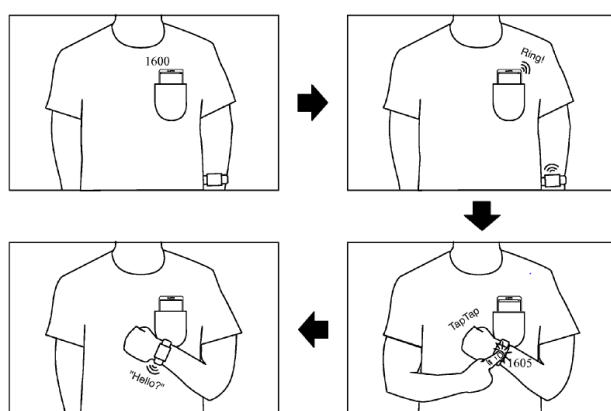


Figure 38

There are probably many more of those active utility patents covering everything from user interfaces through to various aspects of their heart rate monitor and far beyond, such as: “pacing activity data of a user”¹⁰², “local model for calorimetry”¹⁰³, “method to estimate physical activity rating from pedometer data”¹⁰⁴, “physical activity and workout monitor”¹⁰⁵, “method and system to calibrate fitness level and direct calorie burn using motion, location sensing, and heart rate”¹⁰⁶, “context-aware heart rate estimation”¹⁰⁷, “accurate calorimetry for intermittent exercises”¹⁰⁸, “sensor fusion approach to energy expenditure estimation”¹⁰⁹, “terrain type inference from wearable with motion sensing”¹¹⁰, “method and system to estimate day-long calorie expenditure based on posture”¹¹¹, “multiple light paths architecture and obscuration methods for signal and perfusion index optimization”¹¹², “reflective surfaces for PPG signal detection”¹¹³, “latent load calibration for calorimetry using sensor fusion”¹¹⁴, “high strength retention loops for wearable brands”¹¹⁵, “wearable electronic device”¹¹⁶, “reduced-size interfaces for managing alerts”¹¹⁷, “electronic touch communication”¹¹⁸,

¹⁰² U.S. Patent No. 20160058331 A1 (filed Sept. 2, 2014).

¹⁰³ U.S. Patent No. 20160058332 A1 (filed Sept. 30, 2014).

¹⁰⁴ U.S. Patent No. 20160058333 A1 (filed Sept. 30, 2014).

¹⁰⁵ U.S. Patent No. 20160058336 A1 (filed Aug. 28, 2015).

¹⁰⁶ U.S. Patent No. 20160058356 A1 (filed Sept. 30, 2014).

¹⁰⁷ U.S. Patent No. 20160058367 A1 (filed July 29, 2015).

¹⁰⁸ U.S. Patent No. 20160058370 A1 (filed Sept. 30, 2014).

¹⁰⁹ U.S. Patent No. 20160058371 A1 (filed Sept. 30, 2014).

¹¹⁰ U.S. Patent No. 20160058372 A1 (filed Sept. 30, 2014).

¹¹¹ U.S. Patent No. 20160058329 A1 (filed Sept. 30, 2014).

¹¹² U.S. Patent No. 20160058312 A1 (filed Dec. 12, 2014).

¹¹³ U.S. Patent No. 20160058309 A1 (filed Aug. 27, 2014).

¹¹⁴ U.S. Patent No. 20160058302 A1 (filed Sept. 30, 2014).

¹¹⁵ U.S. Patent No. 20160058164 A1 (filed April 26, 2015).

¹¹⁶ U.S. Patent No. 20160058375 A1 (filed Sept. 1, 2015).

¹¹⁷ U.S. Patent No. 20160062540 A1 (filed Aug. 27, 2015).

¹¹⁸ U.S. Patent No. 20160062541 A1 (filed Aug. 29, 2015).



“reduced size user interface”¹¹⁹, “music user interface”¹²⁰, “stopwatch and timer user interfaces”¹²¹, “reduced-size user interfaces for dynamically updated application overviews”¹²², “user interface for limiting notifications and alerts”¹²³, “multi-dimensional object rearrangement”¹²⁴, “button functionality”¹²⁵, “image display and interaction using a mobile device”¹²⁶, “camera remote control”¹²⁷, “remote camera user interface”¹²⁸, “phone user interface”¹²⁹, “electronic message user interface”¹³⁰, “capacitively balanced inductive charging coil”¹³¹, “operating an inductive energy transfer system”¹³², etc.

(ii) *In Europe*

In Europe, the European Patent Office, the patent granting authority offering inventors a uniform application procedure which enables them to seek patent protection in up to 40 European countries,¹³³ published a patent revealing the Apple Watch attachment system for bands (see figure below).¹³⁴

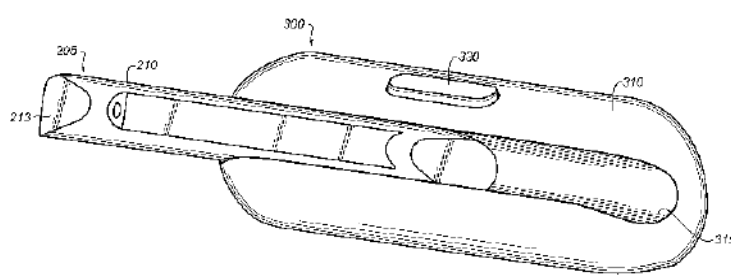


Figure 39

¹¹⁹ U.S. Patent No. 20160062573 A1 (filed Aug. 28, 2015).

¹²⁰ U.S. Patent No. 20160062567 A1 (filed Aug. 19, 2015).

¹²¹ U.S. Patent No. 20160062582 A1 (filed June 26, 2015).

¹²² U.S. Patent No. 20160062589 A1 (filed Aug. 10, 2015).

¹²³ U.S. Patent No. 20160062590 A1 (filed Aug. 19, 2015).

¹²⁴ U.S. Patent No. 20160062598 A1 (filed March 6, 2015).

¹²⁵ U.S. Patent No. 20160062608 A1 (filed March 6, 2015).

¹²⁶ U.S. Patent No. 20160062623 A1 (filed Sept. 2, 2014).

¹²⁷ U.S. Patent No. 20160065831 A1 (filed Sept. 1, 2015).

¹²⁸ U.S. Patent No. 20160065827 A1 (filed March 6, 2015).

¹²⁹ U.S. Patent No. 20160065708 A1 (filed Aug. 31, 2015).

¹³⁰ U.S. Patent No. 20160065509 A1 (filed March 7, 2015).

¹³¹ U.S. Patent No. 20160064137 A1 (filed Aug. 31, 2015).

¹³² U.S. Patent No. 20160064992 A1 (filed July 9, 2015).

¹³³ The European Patent Office, <https://www.epo.org/about-us/office.html> (last visited July 5, 2016).

¹³⁴ EU Patent Application No. AU2015100951 A4 (filed July 17, 2014) http://worldwide.espacenet.com/publicationDetails/biblio?DB=worldwide.espacenet.com&II=0&ND=3&adjacent=true&locale=en_EP&FT=D&date=20150820&CC=AU&NR=2015100951A4&KC=A4.





Apple asserted a claim of priority over an application on foreign filing in Australia. As noted in the description, the new attachment system can be widely varied. By way of example, "(...) the consumer product is a portable consumer product. In another example, the consumer product is a wearable product. Additional and more specific examples of the consumer product include mobile phones, personal digital assistants, music players, timekeeping devices, health monitoring devices, tablet computers, laptop computers, glasses (electronic or otherwise), portable storage devices and the like; (...) and even used with non-electronic devices including purely mechanical timepieces, luggage, purses, jewelry, and the like".¹³⁵

In June 2015, Apple obtained a patent for the Apple Watch heart rate monitors, namely a "Skin proximity and tilt effect sensor".¹³⁶ With this invention, a sensor on the back of the Apple Watch measures the heart rate of a person. The user can then see the heart rate in the heart rate "Glance" (i.e. the quick way to access important information and functions without launching an app) or in the Workout app.

The invention targets a portable electronic device that can be worn or resting on a user body part, or attached to a user body part (in other words, the Apple Watch). The device can include electrodes for calculating distances and rotational angles between the user body part and the device. Based on the calculated distances and rotational angles, a physical activity of the user can be determined.¹³⁷ For instance, the device can calculate pitch and roll angles when the user is jogging and track and store the user's speed or running pace. The device can also determine or at least predict physical activities being performed by a user, such as flexing fingers. The description of the invention also mentions the example of the user undergoing physical therapy for a tendonitis issue. The device can notify a user of excessive wrist movement based on one more of the distance, pitch and roll information that exceeds magnitude and/or duration thresholds. It can track the user's movement over the course of a certain timeframe, and a doctor can use the historically tracked information for therapy purposes.¹³⁸

This patent is a very important part of iOS and the development of Apple's HealthKit tool. It's the service for iOS which helps users keep tracking their health on an iDevice.

¹³⁵ EU Patent Application No. AU2015100951 A4 (filed July 17, 2014).

¹³⁶ International Application No. PCT/US2013/077319 (filed Dec. 20, 2013).

¹³⁷ *Id.*

¹³⁸ *Id.*





(iii) *In China*

At the time of writing, we are not aware of any utility patent filed in this country.

C. Preliminary conclusion

Part III demonstrated how Apple relied on intellectual property rights to protect the fruits of their innovative activities, in this case, the Apple Watch. More precisely, this part detailed, based on the public information available in the IP Agencies around the world, most of the (design) patent applications concerning this new product. But Apple is a peculiar company. Only few businesses can afford to protect everything everywhere. For small businesses, it may sometimes make sense to only file a particular part of the product and take a pragmatic approach to something that protects the core. But for a company like Apple, where the quality of innovations is highly regarded, it is more cautions to have filed many applications and eventually abandoned them, than never to have filed at all and being copied by competitors.

The differences and limitations for protecting a new product with intellectual property rights in challenging markets are also a key element to take into account. This Part briefly emphasized on some strategic aspects to measure before investing in a winning exploitation of IP rights. For instance, in the U.S., product designs will generally find a more effective protection with a U.S. design patent than a copyright or a trade dress protection. In China, designs must be registered as design patents in order for them to be protected. In addition, to be patentable in China, a design must not have been published anywhere in the world (absolute novelty) otherwise it could not receive a protection. In Europe, protection is provided to both registered community design and unregistered community design, knowing that, for such an important wearable product, the latter may get less value in a Court of Law.





IV. THE FIRST PATENT CASE INVOLVING THE APPLE WATCH

A. Background

On August 27, 2013, the United States Patent and Trademark Office issued U.S. Patent No. 8,519,834 ("the '834 patent"), entitled "Wrist Wound Vibrating Device" to Missouri-based Masa LLC.¹³⁹

The patent is described as follows:

"A method for alerting a user of a received electronic signal includes coupling an electronic receiver within a wrist wound vibrating device, coupling a vibrating unit to the electronic receiver, and coupling a display panel to the electronic receiver. The method also includes receiving the electronic signal in the electronic receiver from a cell phone transmitter, actuating the vibrating unit in response to the received electronic signal to alert the user of the electronic signal, and displaying a message in the display panel of the wrist wound vibrating device to notify the user of the electronic signal."¹⁴⁰

The '834 patent contains three independent claims and eleven dependent claims. Independent claim 1, and the claims that depend from it, "generally cover a method of receiving and transmitting electronic signals, such as text messages or phone calls, on a vibrating device that can be strapped to a user's wrist, and alerting a user to the received electronic signal by vibrating the device. Independent claims 6 and 10, and their dependent claims, generally claim a vibrating device worn on a user's wrist that receives and sends electronic messages, and the vibrating device is actuated to alert a user that the user has received a message."¹⁴¹

Therefore, Masa LLC is the owner of the '834 patent and holds all the rights attached to the patent.

According to the facts described in the MASA's formal complaint, in a letter dated February 5, 2014, counsel for Masa LLC notified Apple of the '834 patent, and informed the American company that the Apple Watch Products contain many of the same features claimed in the '834 patent.¹⁴² Although Apple was "objectively aware of the '834 patent during the design

¹³⁹ U.S. Patent No. 8,519,834 (filed Aug. 22, 2010).

¹⁴⁰ *Id.*

¹⁴¹ *MASA LLC v. Apple Inc.*, Case No. 4:15-cv-889 (E.D. Mo. 2015), p. 2.

¹⁴² *MASA LLC v. Apple Inc.*, *supra*, p. 6.





phase of the Apple Watch products,”¹⁴³ the iPhone maker released its new line of wearables on April 24, 2015.

On June 5, 2015, Masa LLC filed for patent infringement under 35 U.S.C. §271 at the U.S. District Court for the Eastern District of Missouri over Apple’s Apple Watch.

In July 2015, Apple filed a counterclaim denying that it has committed any acts of infringement of the ‘834 patent and almost all the other allegations made by Masa LLC.¹⁴⁴ Apple did admit that it received a letter of Masa LLC but denied that the Apple Watch products infringe any valid and enforceable claim in the ‘834 Patent.¹⁴⁵ In conclusion, the company firstly argued that the claims failed to meet the condition of patentability and/or otherwise with one or more provisions of 35 U.S.C. §§ 101, 102, 103, and 112 and secondly that it did not infringe directly or indirectly the the ‘834 Patent.

B. Legal issues

The Apple Watch Products are personal electronic devices that are coupled to a strap and designed to be worn on a user’s wrist like a wrist watch. It can alert a user to the received electronic signal by creating a vibration on the user’s wrist. Moreover, it can also receive electronic signals and send notifications to a user regarding, among other things, date, time, calendar appointments, reminders, and emails. Therefore, it seems that Apple’s customers and end-users perform the same methods claimed in the ‘834 patent and the Apple Watch Products have the same features claimed in the ‘834 patent. According to the plaintiff, Apple “has directly infringed claims 1-14 of the ‘834 patent under 35 U.S.C. §271(a) by making, using, selling, and/or offering to sell, its Apple Watch Products within the United States. Apple’s direct infringement is ongoing.”¹⁴⁶

C. Comments

This patent infringement case is the first lawsuit since the launch of the Apple Watch in April 2015. If indeed the Apple Watch contained many of the same features claimed in the ‘834 patent and if Apple was “objectively aware” or knew of the patent, this could be an interesting case. The main question will then be for the U.S. District Court whether Apple acted despite an objectively high likelihood that its actions constituted infringement of a valid patent. As a result, Apple could be held directly and/or indirectly liable for infringement of U.S. ‘834 patent under 35 U.S.C. § 271(a) and (b).

¹⁴³ MASA LLC v. Apple Inc., *supra*, p. 7.

¹⁴⁴ MASA LLC v. Apple Inc., Case No. 4:15-cv-889, p. 47 (Apple counterclaim)

¹⁴⁵ *Id.*, p. 51.

¹⁴⁶ MASA LLC v. Apple Inc., Case No. 4:15-cv-889 (E.D. Mo. 2015), p. 6.





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Masa LLC is seeking damages (but no set amount of money is listed in the claim) and a jury trial.

On February 17, 2016, after due consideration of the issue and in consultation with the parties, the Court referred the case to Mediation pursuant to E.D. Mo. L.R. 6.01 to .05, which requires this process after filing the lawsuit and as a necessary prerequisite before trial. Unless extended by the Court, the Mediation shall be conducted before April 18, 2016.¹⁴⁷

At the end of April 2016, Apple requested that the US District Court Eastern District of Missouri (Eastern Division) stay this litigation pending final, non-appealable resolution of the *Inter Partes Review* of the patent at hand¹⁴⁸. At the time of writing, the case was still pending.¹⁴⁹

¹⁴⁷ *MASA LLC v. Apple Inc.*, Case No. 4:15-cv-889, p. 700.

¹⁴⁸ *MASA LLC v. Apple Inc.*, Case No. 4:15-cv-889-AGF, Doc.#:51.

¹⁴⁹ The research for this Note was completed in December 2016.





V. CONCLUSION

The Apple Watch embodied much development work. In September 2014, Apple presented the Apple Watch, a brand-new hardware Apple product since the 2010 iPad and the death of Steve Jobs. A wearable revolution truly began for the American multinational technology.

Wearable technologies and devices are however not entirely new. In the late 1970s, Sony Walkman was the first type of wearable allowing people to carry recorded music. These devices are nowadays becoming popular, typically smaller, and more portable and regularly accessible by a user (e.g. they may be worn) than traditional consumer electronics.

Apple is, of course, not the only actor on the smartwatch market. New actors and innovations are rapidly coming to market. Unlike the iPhone, the product is not untested but it is an investment that comes with risks if not protected. An early strategic review of the value of individual component of the Apple Watch has most likely been done before investing and creating a new intellectual property portfolio. Indeed, a winning exploitation of intellectual property assets, including but not limited to design patent, know-how, utility patents, trademarks, at a national level but also worldwide, contribute to increase protection and enforcement measures against infringers and competitors.

After the introduction, Part II briefly described the smartwatch and how the first Apple Watch related patent may have look like. Part III described how Apple used intellectual property law in the Unites States, Europe, and China to protect a wearable device such as a smartwatch. The Company applied for and received many design patents covering the various external aspects and the innovative technology incorporated into the Apple Watch. For example, U.S. Design Patent D727,787 for the Apple Watch band attachment; U.S. Design Patent D724,103 for the “slide-in” interchangeable strap system mechanism; U.S. Design Patent D728,624 for the screen where notifications are displayed. Apple also applied for some utility patent such as the U.S. Patent No. 8,787,006 for a wrist-worn electronic device and methods therefor. Some trademark applications were also filed around the world. For instance, Apple obtained a trademark consisting of the classic Apple logo as it is known today (the design of an apple with a bite removed) and the word “Watch”. Part IV introduced the first lawsuit involving the Apple Watch.

The Apple Watch is a masterpiece example of how those intellectual property rights, mostly design patents and trademarks, protect (design) innovators and serve key products for Apple.





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It is however too early to evaluate how the Apple Watch 1 has performed so far not only in terms of sales but also in potential legal proceedings. This wearable is clearly a first generation device with plenty of room for improvement. Nevertheless, Apple is already working on the Apple Watch 3 and it seems that the wrist-based technology will actually become a thing; such as the iPhone? Future will tell.



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