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Mechanical Timepieces & Intellectual Property Protection

Abstract

This article is meant to give you a basic understanding of mechanical timepieces—not just what they are, but how they are different from one another and why that difference is significant. Watches themselves do not need an introduction; they are ubiquitous and have withstood the peaks and troughs of social inequality and have persisted as a commonality between the rich, the poor and the middleclass since the beginning of their mass production in the 19th century. I focus here on the history of watches within the United States because, ultimately, this is a discussion of their legal protection under United States intellectual property law and not a full history lesson on horology. If you would like to establish a foundation of knowledge for the intellectual property which this article discusses, I suggest first reading of the achievements of individuals such as Christiaan Huygens, Peter Henlein, Patek Philippe and Louis Cartier. This article will focus on two areas of intellectual property, patents and trademarks, and their application to mechanical timepieces.

Keywords

watches, mechanical timepieces, patents, trademarks

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MECHANICAL TIMEPIECES & INTELLECTUAL PROPERTY PROTECTION

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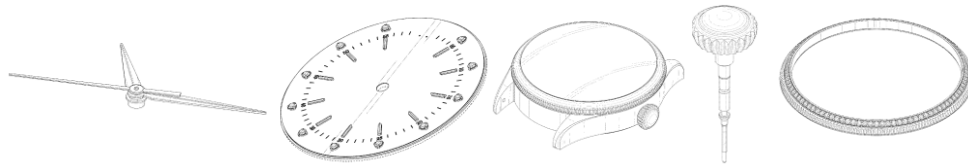
INTRODUCTION

This article is meant to give you a basic understanding of mechanical timepieces—not just what they are, but how they are different from one another and why that difference is significant. Watches themselves do not need an introduction; they are ubiquitous and have withstood the peaks and troughs of social inequality and have persisted as a commonality between the rich, the poor and the middleclass since the beginning of their mass production in the 19th century. I focus here on the history of watches within the United States because, ultimately, this is a discussion of their legal protection under United States intellectual property law and not a full history lesson on horology. If you would like to establish a foundation of knowledge for the intellectual property which this article discusses, I suggest first reading of the achievements of individuals such as Christiaan Huygens, Peter Henlein, Patek Philippe and Louis Cartier.¹ This article will focus on two areas of intellectual property, patents and trademarks, and their application to mechanical timepieces.

¹ For a brief history on wrist watches see David Belcher, *Wrist Watches: From Battlefield to Fashion Accessory*, N.Y. TIMES (Oct. 22, 2013), <http://www.nytimes.com/2013/10/23/fashion/wrist-watches-from-battlefield-to-fashion-accessory.html>. For a major historical timeline infused with significant timepiece developments see *History of Watchmaking*, FOUNDATION HIGH HOROLOGY, <https://www.hautehorlogerie.org/en/encyclopaedia/history-of-watchmaking/> (last visited Nov. 19, 2017).

WATCH ANATOMY 101

If I handed you a watch, you would likely be able to identify the basic exterior components that are common to many traditional watches: the hands, the dial, the case, the crown and the bezel. These components give rise to countless configurations, and achieve both aesthetic and practical functions; for example, the hands and the dial may be applied with luminous phosphorescent, commonly referred to as the lume, which provides a glowing feature, allowing the user to read the timepiece in low-light scenarios. Below, I have compiled figures from various Rolex design patents in order to demonstrate some of the common external watch components.²



As I am sure you can imagine, these components can be altered in countless ways to achieve aesthetic diversity in the watch market, but what is concealed within the case of a mechanical watch is vastly more complex. Simply stated, a mechanical watch's movement is what drives the watch to turn. The movement is a series of mechanical components that, when wound, allow the watch to function, well, as a watch. This is a profoundly simple definition to a Daedalian device.

The movement is the beating heart of the watch, and it is often a central factor in the valuation of a particular timepiece. Each movement design is unique, and within this diversity are different classes and methods of performance. There are movements that require manual winding by turning the crown, and others that wind themselves by the natural arm movements of the wearer; these models are referred to as automatic watches. An example demonstrating the complexity of mechanical watch movements is shown below with figures taken from the applications of U.S. Pub. No. 2009/0129209 and Patent No. D636,692, which were filed in 2009 and 2011, respectively.

² From left to right: Hands (U.S. No. D747,232); Dial (U.S. No. D770,320); Case (U.S. No. D733,582); Crown (U.S. No. D725,531); and Bezel (U.S. No. D766,122).

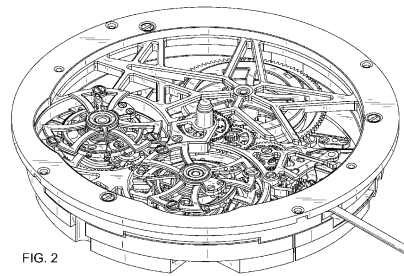
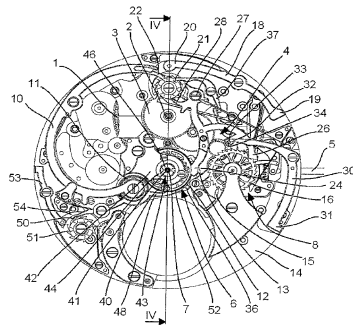


FIG. 2

It may not come as a surprise to you that the inner workings of a mechanical watch are a sort-of tidy confusion that most of us could not reassemble, even if given all the time between seasons of *Game of Thrones*. For those of you that are not aware, that is a tortuously long measurement of time. Largely, watchmakers seek to improve their mechanical components and increase the accuracy of their watches. Watch manufacturer Zenith, for example, recently unveiled what is claimed to be the most accurate mechanical watch on the market, with a daily rate accuracy within 0.3 seconds.³ For comparison, the Caliber 3255 movement released in 2015 by Rolex has an accuracy of $-2/+2$ seconds per day.⁴

Mechanical watch designs are frequently being improved upon simply because there is room for improvement. No matter how accurate the Zenith Oscillator claims to be, it is leagues away from precision quartz watches. A quartz watch is a timepiece that replaces the complex mechanical movements with a quartz crystal and an energy source, your typical watch battery, to achieve—generally—a more accurate time keeper. Quartz watches are relatively new, being introduced into the market in the 1970's, and can be as accurate as $-5/+5$ seconds per year, as opposed to the per day measurement of the mechanical watches.⁵ Quartz watches, in turn, are leagues away from atomic clocks, but those are outside of our discussion. Now that you have a basic understanding of the mechanical watch anatomy, I should talk about the law.

³ Kim Soo-Jin, *Zenith reveals 'most precise mechanical watch ever made' thanks to new oscillator* (Sept. 14, 2017), <http://www.scmp.com/magazines/style/watches-jewellery/article/2111215/zeniths-reveals-most-precise-mechanical-watch-ever>.

⁴ David Bredan, *Rolex Extends Stringent $-2/+2$ Second In-House Watch Accuracy Test To Entire Production* (Feb. 12, 2016), <https://www.ablogtowatch.com/rolex-extends-stringent-in-house-tests/>.

⁵ Jack Forster, *The Longines VHP 'very High Precision' Watches, A High-End Take On Quartz Timekeeping* (March 14, 2017), <https://www.hodinkee.com/articles/longines-vhp-very-high-precision-quartz-introducing>.

PATENT PROTECTION

First, I will discuss patents. United States patent law has its roots in the English and French patent systems. The concept of the patent and the recognition of its necessity in society came from English law in the early 1600's.⁶ The English Statute of Monopolies established the concept of monopolies and patents, which resonates in modern U.S. patent law.⁷ I hesitate in diving too deep into European intellectual property law, since that should be the subject of its own article, and many of the premier watchmakers are, in fact, European entities. Since the European patent systems are the roots of United States patent law, the United States Constitution has to be the trunk.

The U.S. Constitution pledges the promotion of the progress of science and useful arts by securing inventors with the exclusive right to their discoveries.⁸ If you took my advice in the introduction and dove into the history of watchmaking, which I am sure you all did, you now know a bit about the science of watchmaking and the usefulness of wristwatches outside of their basic ability to tell time. For those of you who stayed put, many of the first wristwatches were designed with the soldier in mind: they were easier to access than pocket watches in battle; they could track the day, date and moon phase; and they allowed the first pilots to keep two hands on the flight controls. As flight technology advanced shortly after World War I, pilot's watches advanced in parallel and began to become more complex with the ability to calculate in-flight speed, distance and fuel consumption.⁹ To add to the complexity, these functions were mechanical, driven by gears and hand-winding, and they were the product of intense and precise engineering.

We have identified the roots and the trunk, what remains of the patent system dendron are the branches. The branches are comprised of the many federal statutes, such as the patent acts and antitrust acts, that, when taken together, complete the organism that is our patent system. While some of those branches are dead and have been replaced by new growth, for example the Patent Act of 1790, they still must be considered in the patent system as a whole, for the fact that they played an integral part in the maturity of our system. In the 1950's, the existing patent system was simplified by the enactment of the Patent Act of 1952, which is largely the substance of our

⁶ Vishwas Devaiah, *A History of Patent Law*, ALTERNATIVE LAW FORUM, <http://altlawforum.org/publications/a-history-of-patent-law/> (last visited Nov. 19, 2017).

⁷ *Id.*

⁸ U.S. CONST. art. 1, § 8.

⁹ For more information about wrist watch development in and after World War 1, see Belcher, *supra* note 1.

modern patent law, with the exception of the changes brought by the Leahy-Smith America Invents Act of 2011.¹⁰ The America Invents Act sought to correct many of the prior acts' deficiencies.

Now that you have a mental image of the patent system, let us now talk generally about what some of the requirements are within that system. In order to obtain a utility patent, an invention must be novel, useful, and it must lack obviousness to a patent examiner, in light of other existing inventions, patented or not.¹¹ If an applicant is fortunate enough to be granted a patent from the United States Patent and Trademark Office ("USPTO"), they have twenty years from the filing date of their application to enjoy its benefits. After the expiration of those twenty years, your invention becomes part of the public domain, and other companies can begin to profit off of your contribution to your art. An alternative for inventors looking to hang on to their invention for a bit longer is the option of skipping the patent system altogether and maintaining your process as a trade secret. I have elected to bypass the discussion of trade secrets in this article in order to maintain some simplicity and keep the article at a conservative length; but then again, the length of the article is further compromised by sentences like this one.

Watchmakers invest substantial amounts of time and money into research and development, and ultimately, they utilize patents to protect their watch components that they work so hard to develop. Generally, a patent on the watch itself is too broad in scope for approval, but watch makers frequently patent the design of the watch or newly developed individual components. Examples of such patents include those Rolex patents on the external watch components discussed above.¹² A further example is from 2010 when Rolex patented components that it would later use in the Caliber 3255 movement, which was revealed in 2015.¹³ Shown in the figures below from U.S. Patent No. 8,087,819, Rolex was able to secure this utility patent on its direct-impulse escape, a movement component which allows the pendulum or balance wheel to maintain movement. The new escapement offered increased efficiency over existing designs in the market.

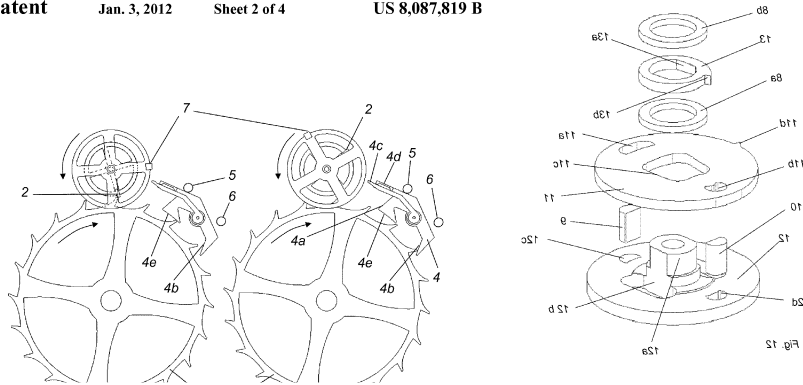
¹⁰ 35 U.S.C. § 1 *et seq.* (Patent Act of 1952 as amended by Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011)).

¹¹ 35 U.S.C. §§ 101-03.

¹² *See supra* note 2.

¹³ Jack Forster, *A Rolex Patent, The Day-Date 40 Caliber 3255, And Thoughts On What Makes For Real Advances In Watchmaking* (June 22, 2016), <https://www.hodinkee.com/articles/a-rolex-patent-the-day-date-40-caliber-3255-and-thoughts-on-what-makes-for-real-advances-in-watchmak>.

U.S. Patent Jan. 3, 2012 Sheet 2 of 4 US 8,087,819 B



Watchmakers also utilize design patents, which protect ornamental design elements of a product. Design patents are quite different from the traditional patent and are a pretty divergent branch of the patent tree, maybe even a different species altogether. What you need to know about design patents for the purposes of this article is that the subject of the design cannot have a functional use, and that the duration of the patent protection is fifteen years as opposed to twenty. Shown below is a figure from Rolex's U.S. Design Patent No. 416,498, which was filed in 1998.¹⁴



Regarding the figure above, I can almost guarantee that you have seen a watch resembling the one in the image. The above figure represents the iconic Rolex dive watch design which can be reasonably stated as the most copied design in the market today. A cursory search of the online watch market revealed the following three watches for sale having no association to Rolex, each being from a different manufacturer.

¹⁴ I realize that I keep using Rolex watches for reference; I suppose that I have expensive taste in my examples.



I am sure you are wondering what watchmakers are doing to combat such flagrant copying. Surely, since watch companies that have invested so much time and money in their brand and design, they would want to enforce their rights over infringing parties, but watchmakers may not be as litigious as you may imagine. Richard Mille, founder of the self-named brand of high-end luxury watches accurately identified two issues regarding litigation of intellectual property in the watch industry. First, he stated that “it is now obvious that [infringing watchmakers] are taking legal advice about just how far they can go to copy the spirit of a particular brand without stepping over the line . . .”¹⁵ Next, Richard accurately indicated that “[Rolex] is the most copied brand in existence, yet its watches sell like hot cakes.”¹⁶

Looking more deeply into Richard’s comments, we can parse out two of the arguments for watchmakers against litigation. Richard’s first comment speaks to the issue that litigation incorporates high risk and high cost. A plaintiff has to reinforce the validity of their intellectual property in court with substantial evidence and must also convince a judge and/or a jury that the defendant’s product is infringing upon their rights. Litigation is very expensive, and if potential infringers are adequately counseled on intellectual property law, they may legally toe the line of infringement. Pursuing such an infringer in court may actual harm your business more than it rewards it, if the outcome is not favorable. Richard’s second comment speaks to a similar financial issue in that it is difficult to properly measure the financial effect of the infringement. Using Rolex as an example,¹⁷ Richard demonstrates that even if the industry in plagued with homagery, it may be hard to quantify the actual damage to your brand or business. The Rolex brand is known for its top-tier quality in its products, and a Submariner copy that costs 1% of the original would be hard for a reasonable consumer to mistake for the real

¹⁵ Simon de Burton, *Audemars Piguet wins victory to protect a watch design icon*, FINANCIAL TIMES (March 26, 2014), <https://www.ft.com/content/1625afaa-925c-11e3-8018-00144feab7de>.

¹⁶ *Id.*

¹⁷ See, I am not the only one.

thing.¹⁸ The exception to this outlook on litigation is the actual use of the brand's name or symbols on the infringing products, which brings us to our next section, trademark law.

TRADEMARK & TRADE DRESS PROTECTION

The concept of trademark rights and protection began in Europe, and its lineage is similar to our patent system pedigree discussed above. The youthful United States struggled to get a decent grasp on trademark law, and its first few attempts at legislation failed. The statute that stuck, and the statute that governs trademark law today, was enacted in 1946, and is titled the Lanham Act (the "Act").¹⁹ The Act describes a trademark as a word, symbol or phrase used to identify and distinguish a particular seller's product.²⁰ Trademarks are easily recognizable in today's culture—UGG, Starbucks, The North Face—but trademark protection extends a bit further than you may imagine. Trademark protection may also be able to protect the design or packaging of a product, if the design is non-functional and does not provide a competitive advantage within the marketplace. This type of protectable right is referred to as a trade dress, and it can extend to "size, shape, color, color combinations, texture, graphics, or even particular sales techniques."²¹ Examples of trade dress include the Coca-Cola bottle, the décor at the Hard Rock Café, various wine bottle designs, and the Dallas Cowboys' Cheerleader's uniforms.

Unsurprisingly, watchmakers utilize trademark protection over several aspects of their products. The most obvious example is the name of their brand—Rolex, Omega, Timex, Seiko—and the name of the model—Submariner, Seamaster, Weekender, Presage.²² Trademarks may also protect the design of a watch. For example, one of the most iconic luxury watch designs by the premiere watch manufacturer Audemars Piguet ("Audemars"), is the Royal Oak design. Pictured below is a drawing from the Trademark Registration No. 2,866,069 held by Audemars which protects the Royal Oak's unique octagonal design along with its eight screws.

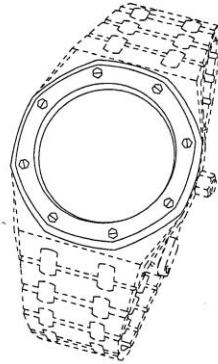
¹⁸ Although, the watchmaker may argue that the copy dilutes the exclusivity of the design in the market.

¹⁹ 15 U.S.C. § 1051.

²⁰ *Id.* § 1127.

²¹ *Two Pesos, Inc. v. Taco Cabana, Inc.*, 505 U.S. 763, 765 (1992) (citing *John H. Harland Co. v. Clarke Checks, Inc.*, 711 F.2d 966, 980 (11th Cir. 1983)).

²² An example of a brand trademark is the Omega mark (Registration No. 5094915), and an example of a model trademark is Omega's Moonwatch mark (Registration No. 5211480).



The Royal Oak design provides an ideal example of intellectual property protection that has been aggressively enforced against other manufacturers in the market. In 2014, Audemars initiated an unfair competition and trademark infringement lawsuit against Swiss Watch International, Inc. (“Swiss”) claiming infringement of their Royal Oak trademarks, for which Audemars held four.²³ Swiss began producing the Trimix Diver, which had a similar octagonal design to that of the Royal Oak.²⁴ Swiss argued that the octagon was one of the limited designs available to watchmakers, and that the design was functional, and therefore, un-protectable under trademark law.²⁵

The Court analyzed the validity of the trade dress of Audemars’s design mark. Judge Baer outlined the requirements to demonstrate valid trade dress: (1) the mark is distinctive as to the source of the good, and (2) there is a likelihood of confusion between the goods of the parties.²⁶ Factors demonstrating distinctiveness include advertising costs, consumer studies, media coverage, sales success, copying attempts, and length and exclusivity of design.²⁷ The Court found the majority of these factors weighed in favor of Audemars.²⁸ Next, the court analyzed the factors demonstrating likelihood of confusion, which include the strength of the mark, similarity between the marks, proximity of the products, likelihood of gap-bridging by consumers, actual confusion, Swiss’s good faith, quality of Swiss’s products, and sophistication of the buyers.²⁹ The Court again found that the majority of the

²³ *Audemars Piguet Holding S.A. v. Swiss Watch Int'l, Inc.*, 46 F. Supp. 3d 255 (S.D.N.Y. 2014).

²⁴ *Id.* at 274.

²⁵ *Id.* at 270.

²⁶ *Id.* at 276.

²⁷ *Id.* at 277-78.

²⁸ *Id.* At 278.

²⁹ *Id.* at 278-82

factors weighed in favor of Audemars.³⁰

Upon completion of its analysis, the Court found that Swiss had infringed the Royal Oak trade dress and had participated in unfair competition methods.³¹ The Court issued permanent injunctions prohibiting Swiss from manufacturing, distributing, shipping, advertising, marketing, importing, promoting, selling or offering for sale any of its infringing products, and awarded Audemar with \$9.8 million in damages.³² The outcome of this case was a significant victory for watchmakers. Richard Mille articulated his opinion of the case when he stated that “judges are beginning to understand that legitimate brands are investing millions in infrastructure and design, only for these parasites to come along and copy what we have worked extremely hard to achieve.”³³ His comment stands for the principles in which trademark law was built upon and reflects the spirit, maybe not as aggressively, of the United States trademark protection system.

CONCLUSION

This article was written to expose you to the pillars of intellectual property supporting the mechanical timepiece industry. Watchmakers seek protective rights over their products in both utility patents in their watch components as well as design patents in the ornamental features of their products. Trademark law protects the watchmakers brand name, their model name, their symbols, their logos, and may also protect a distinctive non-functional design of many recognizable timepieces. Hopefully, this introduction into mechanical watch designs allows you to acknowledge the complexity and the uniqueness of mechanical timepieces, and guides you to appreciate them beyond their functional ability to inform you of the time.

³⁰ *Id.* at 282.

³¹ *Id.* at 293.

³² *Id.* at 293-94.

³³ Burton, *supra* note 16.