

## Three Great Patented Inventions

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Since the first patent was issued, there have been patents granted for many great inventions. Below we discuss just three of these inventions and some of the issues encountered by the patentee.

### The Post - it™ note - the invention we didn't even know we needed.

In 1970 a patent was filed on behalf of 3M for an invention titled *Acrylate Copolymer Microspheres*.<sup>1</sup> The invention detailed in the patent specification was developed accidentally by research chemist Spencer Silver while working for 3M. Silver had developed a low tack, reusable adhesive; essentially glue that barely stuck!

Silver thought there must be a use for this glue and promoted it within 3M. However, it wasn't until 1974 that a colleague of Silver's - Art Fry - having heard about Silver's invention came up with the idea of using the glue to hold the bookmark in his hymnbook in place.

3M encourages its technical staff to spend up to 15% of their time on projects of their own choosing. Art Fry used this time to develop and refine his idea. At one stage during the development process Fry wrote a note to a colleague on one of his bookmarks and it came back with the answer written below on the same note. This prompted Fry to develop the product as more than just a sticky bookmark.

Initial marketing of the new sticky memo pad gave disappointing results. As there was no known equivalent product on the market, customers didn't yet realise the usefulness of the product. It wasn't until 1978 when 3M gave out free samples of the product and the public loved them that it really took off.

3M has since developed and patented various modifications and improvements to their famous product, but that original patent was filed without knowing quite how widely used the invention would become.

### Viagra™ – the infamous invention.

Back in 1991 Pfizer filed patents for a series of compounds with properties useful in the treatment of cardiovascular disorders.<sup>2</sup> At the end of patent specifications there are a series of *claims* that define what the owner of the patent has a monopoly over. The claims of Pfizer's patents described the active compounds. These claims gave Pfizer a monopoly to make and sell these active compounds (and products containing them). Many of these original patent applications were granted and are in force in many countries in the world.

In 1993 Pfizer discovered that the compounds also had other quite different properties. Patent applications were filed which included claims to a method of treatment of erectile dysfunction using the active compounds of the earlier patents.<sup>3</sup> However, in a more daring move, the patents also included broader claims to a method of treating erectile dysfunction using any compound which was a cGMP PDE $\gamma$  inhibitor.

Patents only give a monopoly in each country they are granted. However, Pfizer filed their patent applications in approximately 23 countries around the World.

When Eli Lilly wanted to market their rival product Cialis, the broader claims of these patents became the subject of litigation in many countries.

The multitude of court cases have demonstrated how patent laws and their application can differ between countries. For example, in the Federal Court of Australia the patent was initially found to be invalid in relation to two aspects. Firstly, that the invention defined by these much broader claims was obvious in relation to what was known to a person skilled in the field at the time of filing, *i.e.* not inventive. Secondly, the patentee was deemed not to be entitled to claim such broad subject matter.<sup>4</sup> However, on appeal the invention was found to be inventive, but the patent was still found invalid due to the broad subject matter.<sup>5</sup>

In contrast, at the Court of Appeal in the UK, the patent was found invalid because the invention defined in the claims was found to be obvious.

In the United States, the patent has been undergoing re-examination by the patent office. The Board of Patent Appeals has recently issued their decision, which rejected the broader claim for, among other reasons, not being novel.

Given the huge commercial significance of these cases, they may not stop there.

While the invention defined in the claims of the patent must be novel and inventive for the patent to be valid, how these and other criteria of validity are assessed in the courts of each country can vary.

### Aspirin – the invention that just keeps getting better.

In the 18<sup>th</sup> and 19<sup>th</sup> centuries there was considerable interest from scientists and doctors in the properties of willow bark extract. This extract, which was later found to contain the compound salicylic acid, was found to reduce pain, fever and inflammation. However, it also had the unpleasant side effect of causing gastric irritation, which in some cases could be severe.

The compound acetylsalicylic acid, now commonly known as aspirin, was first discovered by Charles Gerhardt in 1853 while conducting research into ways to reduce the unpleasant side effects of salicylic acid.<sup>6</sup>

In 1898, Felix Hoffmann, a chemist working for Bayer, developed a more efficient method of making acetylsalicylic acid from salicylic acid and acetic anhydride. Bayer tested and then marketed the drug and was granted a patent for Hoffman's manufacturing method.<sup>7</sup>

Aspirin has been used as a painkiller for over 100 years, but more recently it has been found to have many other useful properties. Many patients who have previously had a stroke or heart attack now take low doses of aspirin as an anti-co-

agulant to reduce the chance of further damaging episodes. Studies of the use of aspirin to treat many other diseases are ongoing.

The use of a known compound as a new treatment for a disease poses problems when applying for patent protection. In many countries, including New Zealand, it is not possible to claim a monopoly for a method of treating a disease in humans. In court cases in New Zealand, it has been deemed that it would be morally objectionable to restrict methods of medical treatment. The person that would infringe such a claim in a patent would be the person treating the disease, such as doctors and medical staff.

Consequently, there is an issue of what a patent can claim in this type of situation. The compound itself can't be patented because it is not novel. Additionally, the new method of use can't be patented because the courts have deemed it will not be allowed.

However, in a case at the New Zealand Court of Appeal in 1999,<sup>8</sup> the court found this type of situation could be covered in a so called *Swiss-style* patent claim, so named because it was first used in Switzerland. Such claims take the form of, for example, *The use of aspirin in the manufacture of a medicament, for the treatment of heart disease.*

This type of claim doesn't claim the method of use as such; it claims the use to make a medicine for a specified purpose. If you see convoluted wording such as this in the claims of a patent, think of the example of Aspirin.

A reminder: if you have any queries regarding intellectual property related matters (including patents, trademarks, copyright or licensing), please contact us.

### References

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4. Federal Court of Australia, *Eli Lilly and Company vs Pfizer Overseas Pharmaceuticals* [2005] FCA 67.
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6. C. Gerhardt, *Ann.* **1853**, 87, 149.
7. United States Patent Number 644,077.
8. *Pharmaceutical Management Agency Ltd vs Commissioner of Patents* (1999) 46 IPR 655.



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