An Introduction into Patents

with clothes-peg example

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Colophon

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figure 1.1 is in the public domain, figure 5.1, text of laws in appendix D, documents in appendix E

The source can be found on Github.

Contents

List of Figures

Chapter 1

Introduction

1.1 To the audience

This reader presents an introduction on the use of know-how and intellectual properties (IP) and its benefits for students in science, engineering, medical and business courses. The basic concepts and definitions of IP will be treated and also their use and purpose will be described.

The different topics of IP are explained with an example relevant to your background.

Those interested will find additional information in the appendix appendix B by following the links.

1.2 Every day IP

Chances are that you are using products or services appropriated by a variety of intellectual property rights (IPR) on a daily basis, eg. brands, designs, patents, copyrights.

Many of the products that you will buy or use daily are from a certain brand. Such a brand makes you recognize the product and the manufacturer. For example the brand Coca-Cola for cola. On the other hand manufacturers and organisations use their brands to market their products and services.

Next to brands, organisations have their tradenames registered at the Chamber of Commerce.

The book you are reading or the music you are listening to are works made by an author or musician. These makers would like to be rewarded for the efforts put into the making of their work. You are therefore not allowed to copy this work without their permission since it is copyrighted.

In the development and production of bicycles and cars there are many proprietary technologies. Manufacturers of these product would like to earn back their investments in research and development by using patents.

When you are already developing products yourself now or in the future and when involved as entrepreneur or manager you will have to work with different kinds of IP. As a student it is therefore useful to acquire sufficient knowledge of IP for your future career. Even during studies you it can be worthwhile to use them for many reasons, for example for design assignments.

1.3 Why do IP rights exist?

Several hundred years ago the use of intellectual property rights was hardly known. At the beginning of the book printing technology it became possible to copy and disseminate works of literature far more easily. From that moment authors and publishers started to feel the need to appropriate the rights for the production and distribution of these works. With new technologies during the Industrial Revolution mass production in large quantities became feasible for products and devices. This gave rise to a growing interest by manufacturing companies to appropriate trademarks, logos and patents for their products and inventions.

The modern patent in Venice

During the fifteenth century, Venice was a rich and flourishing city. One of the reasons for this prosperity was the stained glass produced on the island of Murano.

This was a rare and expensive product that became an important economical asset for the city.

However, the formula for making coloured glass was known only to a few people: the glassmakers of Murano.

The Senate of Venice began to worry about the possibility that the glassmakers might die or flee to other countries, thus losing this precious secret.

To avoid such hypothesis, Venice offered the glassmakers to train some apprentices sent by the city. However, the glassmakers refused because accepting the offer would have meant that they loose their monopoly and create potential competitors.

Understanding Murano's concern, Venice offered, in exchange for the secret, an exclusive right for a limited time to guarantee

the glassmakers monopoly. The document granting this right was called a “patent”, from the Latin verb “patere”, meaning to make known.

Thanks to this, the craftsmen accepted the offer and Venice managed to keep the secret, so that we can still enjoy the beautiful coloured glass of Murano today.

In 1474, Venice published the first patent statue in history, to regulate the matter. See figure 1.1.

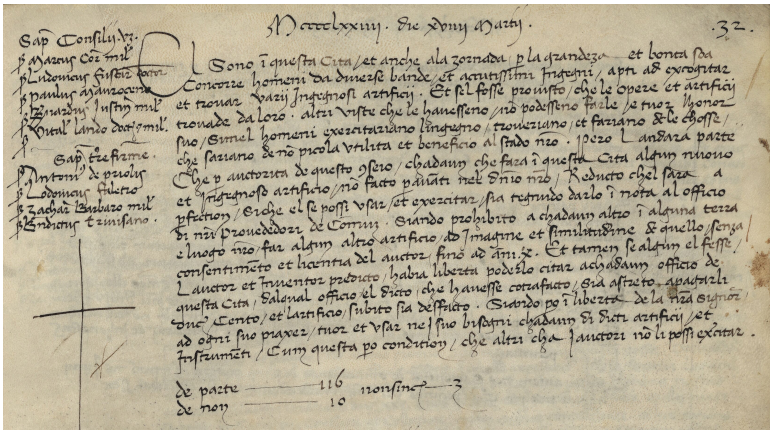

Figure 1.1: The Venetian Patent Statute, enacted by the Senate of Venice in 1474, is widely accepted to be the basis for the earliest patent system in the world.

The general concept behind the use of intellectual property rights is that the creator or manufacturer can apply for a temporary exclusive right hence appropriating their (often intangible) assets and stopping competitors. By doing so the IP owner acquires the possibility to exploit the production of these assets which are otherwise easily copied or manufactured by competitors. So, on the one hand intellectual property rights incentivize persons and innovators who invested both time and money to develop a new product. While on the other hand competitors cannot copy the product and sell it at a cheaper prices without making such investments.

Consumers of those products which have been appropriated with intellectual property rights may have to pay a higher price. Without these intellectual property rights competitors would have been able to sell the products at a lower price. For society at large the introduction of IPR is not only to have all products available at the lowest prices, but to have access to new products and innovations. While using IPR innovative companies are temporarily in a position to charge higher prices thus enabling a return on (earlier made) investments. This is shown in figure 1.2.

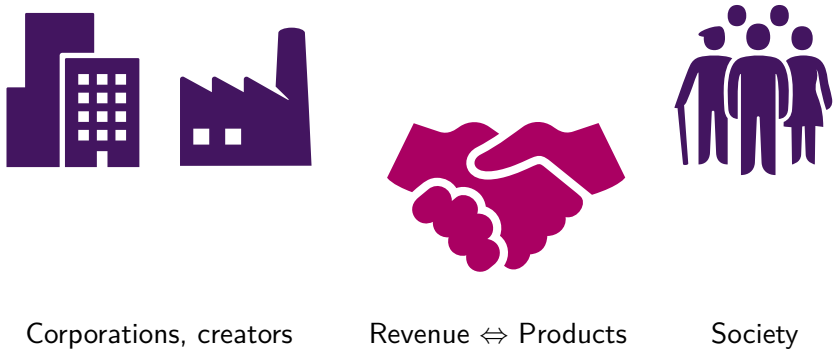

Figure 1.2: Use for business and society

1.4 Well known IP

Companies, entrepreneurs, authors, engineers, developers, scientists and inventors can use a variety of IPRs like copyrights, trademarks, patents, trade names, logos, designs, databases, plant breeders, integrated circuit layout and trade secrets.

Some of the well known IP rights are:

Copyright Will give the creator (author) at the end of the creation automatically global protection for original works like text, music and images. Copyrights limit free distribution of the work.

Trademarks After registration, the trademark owner receives the exclusive right to use the trademark for certain goods and services. A trademark right can be used to take action against competitors who want to exploit the same or similar trademark in the same market.

Patents After the application, registration and examination of a patent, others can be excluded from the commercial exploitation of the patented invention.

Tradenames Trade and company names are used to make a company known to customers in the market and ensure a reputation and thus customer loyalty. Another company may not cause confusion with its trade name by using a trade name that is too similar to a previously registered trade name.

Designs After registration, the design holder receives the exclusive right to use the design. A design right can be used to take legal action against competitors who wish to exploit a similar design.

1.5 Frequently used IP for innovations

This document will not describe the legal aspects of IP. See the links to several articles of different laws in appendix D. We will describe how to use IP, and more specifically for innovations. An overview of the importance of the different IP rights for innovations can be seen in the following table.

Table 1.1: Effectiveness of appropriability mechanisms for product innovations; % product innovations for which deemed effective.

Sector	n	Secrecy	Patents	Other IPRs	Lead time	Complementary sales services	Complementary manufacturing
Food	89	59	18	21	53	40	51
Petroleum	15	62	33	6	49	40	36
Basic chemicals	35	48	39	12	38	46	45
Drugs	49	54	50	21	50	33	49
Machinery tools	10	62	36	9	61	43	35
Computers	25	44	41	27	61	40	38
Electrical equipment	22	39	35	15	33	32	32
Semiconductors	18	60	27	23	53	42	48
Medical equipment	67	51	55	29	58	52	49
Autoparts	30	51	44	16	64	45	53
All	1118	51	35	21	53	43	46

From: Scotchmer [Sco04] Table 9.1, page 260.

Source: Cohen, Nelson, and Walsh [CNW00], table 1. Note: Each number is a mean response, representing the percentage of product innovations in the row category for which the type of protection in the column is deemed "effective". The response categories are <10%, 10%–40%, 41%–60%, 61%–90%, >90%.

In general we can see that secrecy (including what we call know-how) is one

of the most frequently used appropriability mechanisms. At the same time patents are important in the sectors drugs and medical equipment.

Other IPRs (for example trademarks or designs) are less frequently used for innovations, but are of course very important for sales and marketing.

1.6 An example

In this section we introduce the example which will be elaborated in next chapters.

The main example is a clothes peg. This clothes peg is invented by Bertrand Barré en Francis Lepage (Figure 1.3) from France.

Figure 1.3: Bertrand Barré et Francis Lepage

Clothes pegs exist already for a long time in different implementations. See as an example the article in section E.3. One could therefore conclude that improvements to clothes pegs are not possible anymore, because everything is already known. Still new developments in clothes pegs are made. These developments are however not so extensive as in the past.

The clothes peg of the example is used for delicate laundry. An imprint on the delicate laundry is to be avoided. However, the normal known clothes pegs, made of wood, leave imprints on the laundry. Fixing the laundry on a drying line, so that it does not fall off, is an important requirement of clothes pegs. These somewhat competing requirements are solved in the example, by using soft material on the clothes peg at the place where the laundry is contacted. The chosen solution is depicted in figure 1.4. The red part (near number 11) is the soft material.

A patent application is filed for this newly developed clothes peg. This patent application can be read in section E.1. This patent application is used as the example for the explanation of patents.

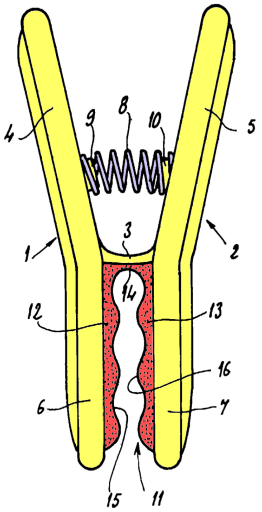

Figure 1.4: Clothes peg with soft material

Chapter 2

Know-how and trade secrets

2.1 Introduction

Know-how and trade secrets are important assets for companies and public research institutes.

Many entrepreneurs consider know-how as one of the most valuable assets of their company. Hence and although know-how is not a IP right as such we will go into know-how in this chapter.

2.2 What is know-how?

> Know-how is defined by certain knowledge and skill set obtained by a limited number of specific persons involved in manufacturing, marketing and sales processes of an organisation. By its very nature know-how is not accessible freely or without certain limitations to third parties and persons.

General knowledge in textbooks available to everybody is not considered know-how. See for an example of this definition of know-how Nieuwenhoven Helbach, Huydecoper, and Nispen [NHN02] chapter 5 (in Dutch).

In this context, third parties can be defined as organisations or persons who do not have access to certain know-how. In general very few persons within an organisation have access to specific know-how. Third parties and outsiders will always have to invest considerable time and resources to build up comparable know-how. As such, we conclude that know-how in an organisation is kept secret from third parties.

It is evident that persons must possess certain kills and knowledge in order to fulfill certain processes and tasks, for example the design and assembly

of a product, the draft of an algorithm, the acquisition and analysis of data. Therefore know-how consists of the combination of technical skills, the processing of information thereby using technical knowledge. Besides, non-technical knowledge like market data, marketing techniques, information about rules and regulations within a political context, data about relations and networks are also part of the know-how of organisations.

Investments in research and development contribute to the formation of valuable know-how, as well as working experience of and technical courses for personnel. In this case the acquisition and storage of information like technical data, equations, standards, specifications, processes, methods, recipes, drawings and their use by professional personnel.

2.3 Using know-how

Many corporations, public research institutes and multinationals have a division with IP specialists or in house council. They make sure that procedures, certain rules and codes of conduct concerning IP and know-how are in place and will be followed upon. Such procedures and conduct are often mentioned explicitly in labor contracts. An example of this is a non-disclosure clause.

But also at small and medium sized enterprises or startup companies without in house IP specialists or council it is important to implement internal procedures and codes of conduct to deal with IP and know-how. For those companies which supply parts, products or processes in a supply chain these procedures and codes of conduct are even more important. Without them such companies may run the risk that employees share too much essential know-how with customers or clients.

2.3.1 Using know-how by the company itself

The use of IP rights enable companies to have a positive return on investment in their research, development, marketing and manufacturing with a healthy commercial margin. On top of this, it is important to realise that the combined use of know-how and patents contribute to the successful introduction of technical innovations in the marketplace. In this process know-how of specialists is essential to deliver products and services to customers and clients. In the economic domain the concepts and use of know-how and patents show a striking number of resemblance. Both are a source of (technical) knowledge enabling the owner and user to use technical capacities and developments and thereby a head start or lead advantage which is not available to competitors. The owner of the know-how can exploit this

technological advantage in the marketplace, for example in certain manufacturing processes.

2.3.2 Using know-how by third parties

Many companies do not have manufacturing plants in all countries over the globe. In those countries where there is an outlet for their products or services but where they are not operational themselves in terms of manufacturing, marketing and sales it may be profitable to act as a licensor and work with license agreements. These license agreements are often struck for both patents as well as for know-how. The temporary, exclusive nature of patents provide either the patentee or the patent licensee protection against infringement by competitors. On the other hand, license agreements between the licensor and licensee determine the scope and field of use, geographical area, region or country, time frame in years and royalties or milestones to be paid.

2.4 Rules and regulations

Rules and regulations for know-how can be found in the EU directive 2016/943 and in the Dutch Act of Trade secret protection.

> This act rules the protection against unlawful public use of know-how and business information. This combination of know-how and business information is often defined as trade secrets.

According to the act and the directive a company or organisation must comply to certain conditions with regard to the information which:

a. is kept secret because it is not common knowledge or accessible by third parties,
b. has value in relationship with the trade or transactions of the company or organisation, and
c. is kept secret by the company or organisation by means of certain measures (for example a registration system and limited accessible for persons only on a need to know basis).

All in all it must be clear that know-how is a personalized asset. At the end of a labor contract the know-how does not automatically disappear (see figure 2.1). This situation raises the question if know-how can be claimed by the employer at all?

Figure 2.1: Know-how: There it is and there it goes.

Chapter 3

Patents

3.1 Introduction

With a patent you become the owner of your invention.

Thus a patent is property which you can use:

a. preventing others to use your invention, or
b. giving permission to others to use your invention.

The concept of property is defined under (inter) national law and regulations. This is also true for patents since patents are part of industrial property rights. Using a patent in a specific country will always depend on the framework of laws and legislation in that country.

Since the use of an invention is often not limited to a particular country only, it can be profitable to use it in other countries as well.

The world of inventions is therefore multinational or worldwide.

Since patents are used on a globally there are several international treaties for patents next to national patent laws. An introduction into the most important international treaties can be found in section 3.2.

Most relevant features of patents are elaborated in following sections.

From section 3.6, the contents of a patent will be described using the main example (see section 1.6).

3.2 Patent laws and treaties

Every country has its own patent law. In addition, there are often regional or international cooperations through treaties. An example of such a regional cooperation is the European Patent Convention. This European cooperation has ensured that the patent laws in the 38 member states are harmonised. There is also a global treaty for a central worldwide patent application through the World Intellectual Property Organization (WIPO) (193 member states).

- The Dutch Patent Act is determined in the Rijksoctrooiwet 1995 (ROW). The Netherlands Patent Office (Octrooicentrum Nederland) grants Dutch patents.
- The patent law for European patents is determined in the European Patent Convention (EPC). A European patent is granted by the European Patent Office (EPO). Next they are registered by the applicant in the countries of interest.
- The route a worldwide patent application is determined in the Patent Cooperation Treaty (PCT). However, no patent will be granted in this procedure. After this central application, the patent application is continued in the countries or regions of interest.

3.3 Patent rights

Patent law excludes others from commercially:

- making,
- using,
- selling, or
- stocking

the invention.

Such exclusivity lasts for a maximum period of 20 years after the filing date of the patent application.

The restrictions that a patent exerts are determined by the legislation of a country in question. These restrictions can therefore differ greatly from country to country. It should be noted that the Treaty of Paris (1883) guarantees a minimum harmonisation.

In Europe, a patent generally restricts the commercial making, use, sale and stocking of the invention, but it does allow to use the invention for one's own non-commercial use.

> So you can build a Ferrari for yourself, but don't sell it to your neighbour, because that would be a commercial act.

Under certain conditions, it is also permitted to use the invention for scientific and research purposes, without being able to be prosecuted for infringement.

For a precise description of the legal consequences of a patent in the Netherlands, see article 53 ROW (in Dutch).

The patent right can no longer be used if the patent holder, or someone else with the consent of the patent holder, has sold the patented product. You can then do whatever you want with the patented product. This is called exhaustion. This is described in article 53 paragraph 5 ROW.

3.4 Inventions

Most people have a general idea about inventions and inventors. For example, it is:

- a new development,
- often with a technical background and
- an improvement over existing technologies.

More formally, an invention is often described as a technical solution to a problem.

> However, an invention is not defined in patent law!

In patent law, the definition of an invention has been avoided by defining accurately what is not considered an invention. For example, theories and mathematical methods are not regarded as inventions hence they cannot be patented.

Furthermore, an invention must be industrially applicable. This requirement of industrial applicability separates patent law from the other intellectual property rights.

The requirements for novelty and inventive step ensure that certain technical developments and inventions are only considered to be patentable inventions, if their subject-matter is not already known by (or disclosed to) the public and is also not obvious.

For a more accurate description of the exceptions on patentability and the basic requirements, see article 52 EPC or article 33(1) PCT.

3.5 Requirements for a patent

There are many requirements that a patent must meet. In addition to formal requirements, there are substantive requirements. Formal requirements are necessary for the proper processing of the application. For example, it is necessary that the patent office can contact the applicant and that the application is written in the correct language.

To obtain a granted patent, the most important substantive requirements are that the invention is:

- new,
- inventive,
- must be sufficiently clear disclosed.

The invention must be new and inventive, otherwise the patent would not contribute to the general knowledge and improvement of technology. It must therefore also be described clearly enough.

3.5.1 Novelty

Novelty means that the invention has not been disclosed. All information that is publicly accessible to the person skilled in the art can be used to determine this. It is an objective criterion, whereby the person skilled in the art is supposed to know all state of the art.

For the assessment of novelty (and inventive step) all information before the filing date of the application is taken into consideration. This is the date of the first filing: 'first to file'.

Until recently, the United States had a different system: 'first to invent'. The moment when the inventor conceived the invention was the moment for the assessment of the requirements. Although fundamentally correct, this brings with it all sorts of problems of proof when conflicts arise. That is why in 2011 the United States also switched to the 'first to file' principle.

Documents with a later publication date than the filing date can not be detrimental to novelty, nor can they take away inventiveness.

So if not all features of the invention are already known, the invention is new:

> An invention shall be considered to be new if it does not form part of the state of the art (see also article 54 (1) EPC or article 33(2) PCT).

3.5.2 State of the art

The state of the art is accurately defined in the patent law:

> The state of the art shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the patent application (see also article 54 (2) EPC or Rule 64 PCT).

This definition stipulates that all information that is publicly accessible in the world is regarded as state of the art. This also includes the documents in a small library in a Chinese mountain village. An important limitation is that the information must be *publicly* accessible. Documentation, such as technical drawings used in a company, is normally not publicly accessible (due to confidentiality). These documents can therefore not be used to assess novelty.

The filing date is an important date. Anything that has become available public after this date will not affect the patent application. If the same invention is applied for on different dates, the person who applied first has the right to the invention.

Each patent application is published 18 months after the first filing. Thereby it also becomes part of the state of the art.

3.5.3 Inventive step

Inventive step means that it is not obvious for the person skilled in the art to carry out the improvement or modification, for which protection is requested, in the particular solution:

> An invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art (see also article 56 EPC or article 33(3) PCT).

In the practice of patent examination, this means that all claimed properties are known from a combination of two embodiments, described in one or two documents. The person skilled in the art is thereby also hinted to combine the features of the two embodiments.

or

If the only difference with a known embodiment is an alternative that is obvious to the person skilled in the art, which he knows on the basis of his general knowledge, then the invention is considered to lack an inventive step. For example: To attach something on a wall, a screw is a well-known alternative to a nail.

3.5.4 Clear and sufficiently disclosed

In a patent, the invention must be made public. This must be done in such a way that it can be performed by the person skilled in the art. It is therefore not possible to obtain a patent and keep your invention secret. See also article 83 and 84 EPC and article 5 PCT.

> A perpetuum mobile is therefore by definition not patentable.[1]

Features that are well known by the person skilled in the art do not need to be described. For example: It is not necessary to describe how something should be fastened, if it is clear to the person skilled in the art that it can be either welded or glued.

The person skilled in the art is defined in patent law as skilled in the field of the invention with broad professional knowledge. The skilled person only knows obvious solutions to problems, but cannot become inventive himself.

3.6 Contents patent application

A patent application consists of the following parts:

Description The description consists of an introduction and a section containing at least one complete embodiment of the invention. The introduction briefly describes what is known in the state of the art, what problem still exists in this known state of the art and a short description of the solution (the invention) to this problem.

Claims The claims define the scope of the patent protection. These claims are normally written as a set of claims. Usually there is a main claim and several dependent claims. The main claim therefore offers the broadest scope of protection. The dependent claims add further features and therefore have a smaller scope of protection than the main claim.

Figures The figures are there to clarify the invention.

The claims determine the scope and type of protection. The legal scope of protection of the patent is therefore determined by the claims. The claims are therefore written in a legal style.

[1] Why is a perpetuum mobile not sufficiently disclosed? Click for explanation.

For maximum protection, the invention is described as broadly as is possible in the claims. But if the invention is described too broadly, then the possibility increases, that it is deemed not new or not inventive.

3.7 Publication patent application

The patent application is published 18 months after the first filing. Figure 3.1 shows the front of the publication of the clothes peg application. After the front page, the pages of the application as filed are published. The whole publication can be seen in section E.1.

This is the A publication (see the A1 code in the publication number WO 01/31108 A1). The A publication is the publication of the patent application. The next publication is the B publication. The B publication is the publication of the granted patent.

Bibliographic data are published on the first page of a patent document. The following data are the most interesting:

Title (Titre) gives a very quick indication of the subject of the patent.

Abstract (Abrégé) gives a short summary of the contents.

Figure next to the abstract is normally a figure from the list of figures which is representing the invention.

Other data on the first page are more interesting to check for the legal aspects of the patent document:

Applicant (Déposant) is the one who has filed the application and the one who will normally have the patent rights.

Inventor (Inventeur) is one person or are more persons who have made a significant contribution to the invention. In US patent law, the inventor is the one who has the rights to the patent. In other countries it is the applicant who has these rights.

Priority date (Priorité) is the date of the first patent application filed and for which a priority is claimed. The patent rights start from this date. In this case there is no priority. The french application (FR 2 777 917) was requested more than one year earlier (28-4-1998). It was therefore not possible to use this earlier application as priority for the PCT application.

Filing date (Date de dépôt) is the date this application was filed.

(12) DEMANDE INTERNATIONALE PUBLIÉE EN VERTU DU TRAITÉ DE COOPÉRATION EN MATIÈRE DE BREVETS (PCT)

(19) Organisation Mondiale de la Propriété Intellectuelle
Bureau international

(43) Date de la publication internationale
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PCT

(10) Numéro de publication internationale
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(25) Langue de dépôt: français

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(81) États désignés *(national)*: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

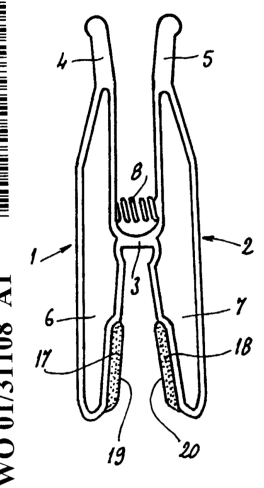
(84) États désignés *(régional)*: brevet ARIPO (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), brevet eurasien (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), brevet européen (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), brevet OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Publiée:
— *Avec rapport de recherche internationale.*

[Suite sur la page suivante]

(54) Title: CLOTHES PEG

(54) Titre: PINCE A LINGE



(57) Abstract: The clothes peg is essentially comprised of two limbs (1, 2) each comprising a front part (6, 7) forming a jaw, arranged opposite the corresponding jaw of the other limb. The two limbs (1, 2) are made of a relatively hard material and the parts forming a jaw (6, 7) are provided with an inner lining (17, 18) made of a relatively flexible material, forming a contact surface (19, 20) with the linen. Clothes are held by the inventive peg in a better manner, whereby marks are avoided.

(57) Abrégé: La pince à linge est constituée essentiellement de deux branches (1, 2) comportant chacune une partie antérieure (6, 7) formant mâchoire, située en regard de la mâchoire correspondante de l'autre branche. Les deux branches (1, 2) sont réalisées en un matériau relativement dur, et leurs parties formant mâchoires (6, 7) sont garnies intérieurement d'un revêtement (17, 18) en un matériau relativement souple, qui forme la surface de contact (19, 20) avec le linge. Une telle pince assure une meilleure tenue du linge, tout en évitant son "marquage".

WO 01/31108 A1

Figure 3.1: Front page of WO 01/31108 A1

Designated states (États désignés) are all the countries that are requested for patent protection when this application was filed under the PCT. The PCT procedure is used to start a world wide patent application.

Publication date (Priorité) is the date this application was published and thereby known to the public. Before this date, the application was secret and not known to the public.

Also some administrative data are mentioned, so that the document can be easily identified:

Publication number (Numéro de publication) is a unique number to identify a patent document. It also gives information on the type of document. The first letters are the country code. In this case WO, which stands for the PCT world wide application. Others are for example EP for the European procedure at the European Patent Office (EPO), NL for the Netherlands, US for the United States, DE for Germany, etc. There is also a kind code. In this case A1, which stands for application published with search report. When an application is granted, then often the B code is used.

Application number (Numéro de la demande) is the number the application gets when it is filed.

There are also classification codes published on the document. These codes are used for searching.

3.8 Claims

The claims determine the scope of protection of the patent. Usually there is a main claim with several dependent claims. The dependent claims define further features of the invention.

The function of the dependent claims is to have more specific claims in case the main claim does not hold up in the examination procedure or in court.

3.8.1 Claim of the clothes peg example

The main claim (translated) of the clothes peg example is as follows (the numbers after the words refer to parts in the drawings; see figure 3.2):

> Clothes peg, consisting essentially of two legs (1, 2) each having an anterior part (6, 7) forming a jaw, situated facing the corresponding jaw of the other leg, characterized in that the parts forming jaws of the two legs (1, 2), made of a relatively hard material, are lined internally with a covering (11; 17, 18) made of a relatively flexible material, provided so as to form the surface (15, 16; 19, 20) contacting the clothes.

The language used in the claim is a lot more complicated than the language you might normally use to describe the invention. The invention can also be described as:

> Clothes peg with soft material where the peg touches the laundry.

One reason for this complicated language in claims is that the text is a legal text. The invention must be legally clearly described. For example, if you write that the soft material is located where the laundry is touched, then that is not legally clear enough. A clothes peg lying on the table does not touch any laundry at all. You do not only want to use the exclusive right of the patent for clothes pegs when the laundry is fixed with the clothes peg, but also for the same clothes peg that is for sale in the shop!

Another reason for the use of this kind of language is that the patent holder wants the largest possible scope of protection. The patent holder would also like to include embodiments of the invention that differ in features that are not important for the invention. Figure 3.2 shows three embodiments of the clothes peg, all three falling within the scope of the claim. The three embodiments differ not only in the type of peg, but also in how the soft material is attached to the peg.

3.8.2 Test for novelty

As mentioned earlier, a patent must be new. In the search report in the publication of the patent application in section E.1, it can be seen that several documents are cited as state of the art. The search report is used by the examiner to asses the novelty and inventive step of the patent application. Many of these documents are considered detrimental to the novelty of the clothes peg claimed in the patent application.

The following demonstrates how novelty can be assessed. It starts with breaking down the claim into separate features. It is then determined whether these features are collectively known in a prior art document. For this exercise, the first document with an X in the category of the search report is used. This document with number FR 2 555 620 can be found in section E.2.

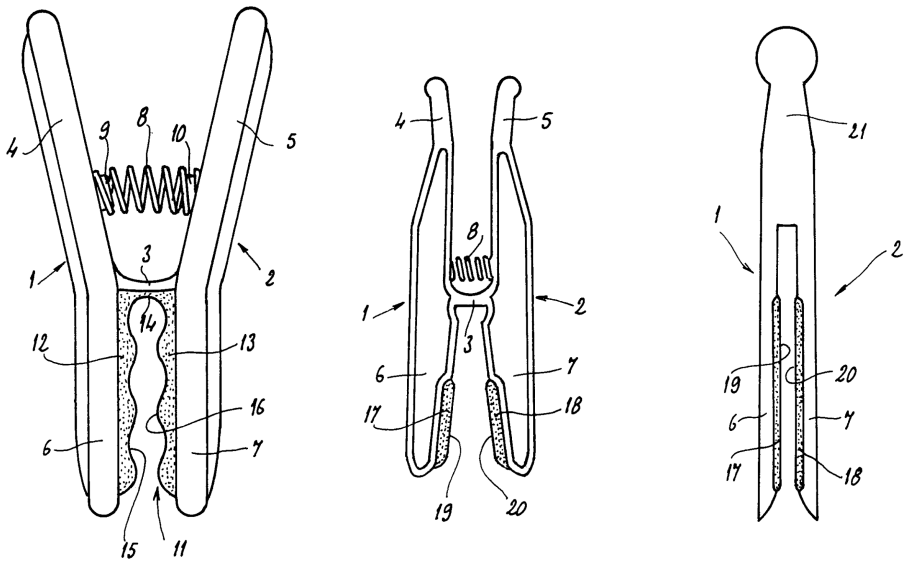


Figure 3.2: The three embodiments of the clothes peg example

Try to find the answer yourself before viewing the answer.

Features claim 1 of the patent application	**Where to be found in FR 2 555 620?**
Clothes peg	Click for answer.
consisting essentially of two legs	Click for answer.
each having an anterior part forming a jaw and situated facing the corresponding jaw of the other leg	Click for answer.
the parts forming jaws of the two legs are made of a relatively hard material	Click for answer.
and are lined internally with a covering made of a relatively flexible material	Click for answer.
so as to form the surface contacting the clothes.	Click for answer.

Thus all the features of the patent application can be found in the document. You have thus demonstrated that the clothes peg as claimed is known from this document. The clothes peg as claimed is therefore not new.

3.9 Patent application procedures

Patents can be applied for in different countries, but also regionally. In Europe, a European patent can be applied for at the European Patent Office (EPO). A worldwide patent application can be applied for via the PCT procedure at the WIPO.

These different patent application procedures have great similarities, but they are not the same. Therefore, the different procedures are briefly described below. Finally, the procedures chosen in the example are described.

3.9.1 EP patent application

The patent application procedure for a European patent (EP) will be discussed first. This procedure is similar to the patent application procedures used in many countries. Figure 3.3 shows an overview of the EP procedure.

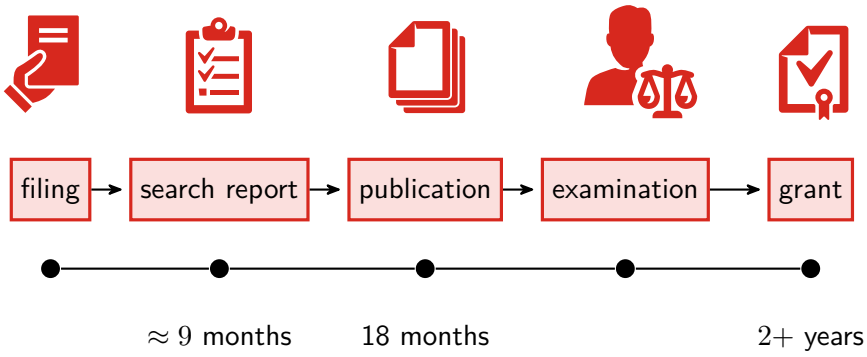


Figure 3.3: EP procedure

The application starts with the filing of the application at the patent office. The first substantive response to the request is a search report. The most relevant state of the art is mentioned in the search report. The state of the art mentioned in the search report is used in the assessment of the requirements for a patent. This assessment of the requirements takes place during the examination. In addition to the search report, a written opinion is delivered with the search report. Possible objections to the grant of the patent are noted in the written opinion. Not being new or not having an inventive step are the most well-known objections.

The application will be published 18 months after the first filing date. Up to the publication date, the application is secret. From the moment of publication, the invention is known all over the world.

Before the patent is granted, first an assessment is made whether the application meets all the requirements. If not all requirements are met, a communication will be written by the examiner and sent to the applicant. This communication states the objections against the grant and that the application can thus not be granted. The applicant has the possibility of overcoming these objections, for example, by amending the claims. This round of objections and amendments can take place several times. At the end of the procedure an oral hearing may also be held to come to a decision.

If there are no objections, the application will be granted. There is also the possibility that the application will be refused if the objections are not overcome.

After the grant, the patent must be validated at the national patent offices in the desired countries in Europe. The European patent then becomes a bundle of national patents.

3.9.2 NL patent application

The Dutch procedure for a patent is simpler than, for example, the European procedure. The Dutch procedure is shown in figure 3.4. A similar procedure is also used in other countries, such as Belgium.

Figure 3.4: NL procedure

The big difference with, for example, the EP procedure is that there is no examination. The patents are granted automatically together with the publication. Also patents that do not meet the requirements are automatically granted. The information from the search report and the accompanying written opinion must then be used to estimate the extent to which the

patent holder can exercise his patent rights. A possible lawsuit will clarify these patent rights.

3.9.3 PCT patent application

The PCT (Patent Cooperation Treaty) procedure, for the worldwide application of a patent, is shown schematically in Figure 3.5. The single central application for the most relevant countries in the world is the advantage of the PCT procedure over national or regional procedures.

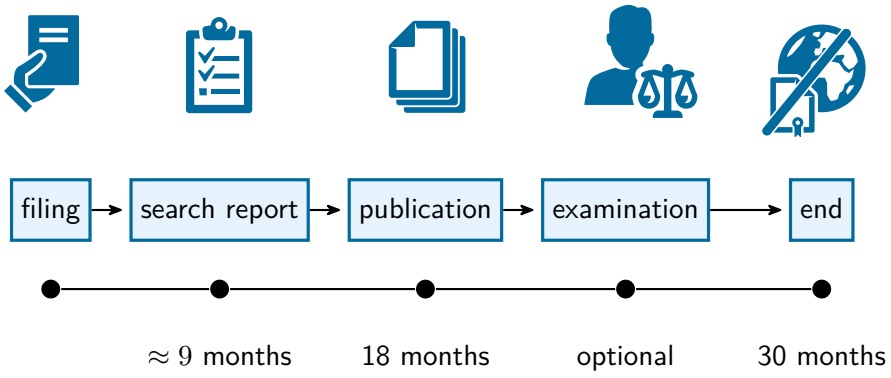


Figure 3.5: PCT procedure

However, there are 2 characteristics that form an important difference to the other procedures:

1. The PCT procedure ends after 30 months. At that moment no patent has been granted.
2. The examination is optional.

The procedure to obtain a patent must be continued in regional or national proceedings. So the PCT procedure is only the beginning of the patent procedure. The optional examination is therefore not a decision to grant or refuse the patent, but an opinion on patentability.

The postponement of the choice of the desired countries and therefore also a postponement of costs is a reason why often the PCT procedure is chosen. Furthermore, the costs of a search report happen only once, because the search report from the PCT phase is used in the later national or regional examination. Otherwise, if parallel applications were made in different countries, these costs would have to be incurred in all the selected countries.

The PCT procedure is therefore of interest if patent rights are expected to be desired in several countries in different regions.

3.9.4 Priority year

It is usually only possible to assess whether continuing the application is useful after receipt of the search report. That is why most countries have the rule that the priority of a previous application from another (or the same) country can be used for 1 year. The applicant then has one year to determine in which countries a patent is also wanted. The later application will then receive the priority date of the earlier application. It is then as if the later application was filed on the date of the earlier application (see also article 87 – 89 EPC or article 8 PCT).

This priority right can also be used for regional procedures such as the EP procedure or for the PCT procedure. It is therefore possible to start with the patent application in one country and then go to the worldwide PCT procedure within 1 year. You then have the opportunity to estimate the usefulness of the patent application before larger costs have to be incurred.

3.9.5 Procedure of the clothes peg patent

Figure 3.6 shows an overview of the procedure from the application of the clothes peg invention up to the grant of the patent.

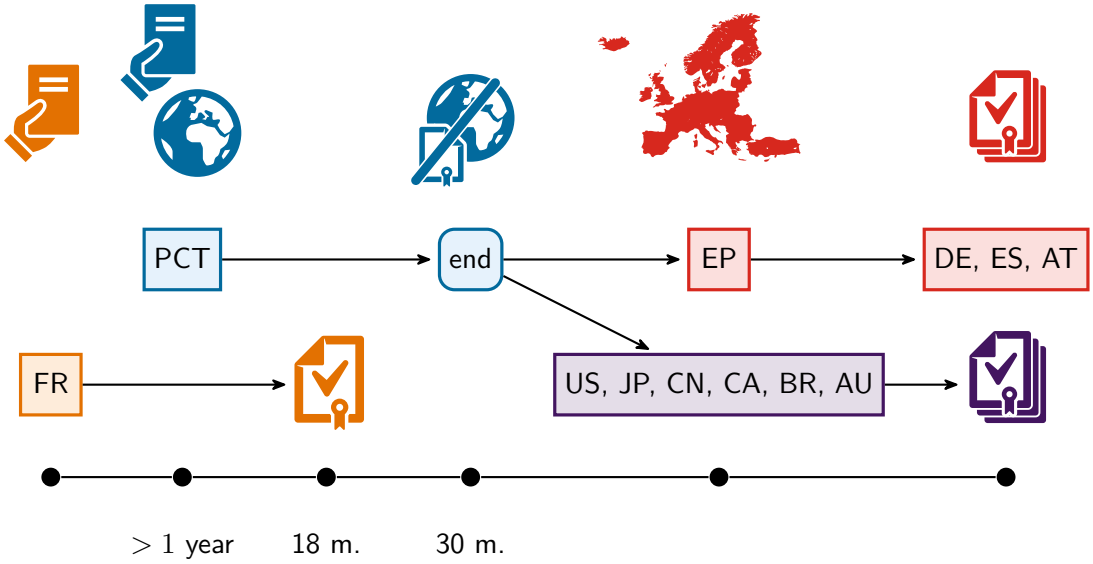


Figure 3.6: Procedure of the clothes peg patent

The first patent application was filed in France. This application was published and granted 18 months after filing. In this procedure there was no examination and the patent was granted automatically, just as in the current Dutch procedure.

More than 1 year passed before the second patent application was filed as a PCT application. Therefore, the second filing could not claim the priority of the first filing. Usually the national application is used as a priority for the second filing. The PCT procedure ends after 30 months.

They decided to continue after the PCT phase in the European (EP) procedure and in various national procedures. The national procedures are in the United States (US), Japan (JP), China (CN), Canada (CA), Brazil (BR), and Australia (AU). The patent was eventually also granted in these countries.

The patent has also been granted in the EP procedure. It has since been validated in only three countries: Germany (DE), Spain (ES) and Austria (AT).

As can be seen, a patent was eventually granted in 10 countries. In this case, a patent has only been filed in the most relevant countries for production or sale. The costs of a patent also play a role in the choice of countries.

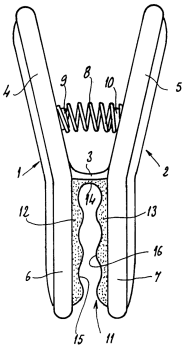
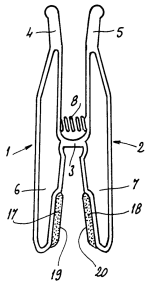
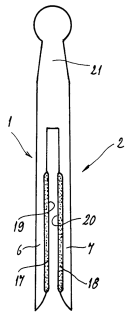
3.9.6 Granted colthes peg patent

From the search report of the patent application for the clothes peg it was clear that the claimed clothes peg was not new. During the examinations in the different patent procedures, the claims have been amended. The main claim that has been granted in the EP procedure is as follows, whereby the added text is in italics:

> Clothes peg, consisting essentially of two legs (1, 2) each having an anterior part (6, 7) forming a jaw, situated facing the corresponding jaw of the other leg, *and a posterior part (4, 5) forming a lever arm, the two legs (1, 2) being connected to each other, at an intermediate point of their length, by a thin web of material (3) acting as a hinge, characterized in that a helical spring (8) for returning to the closed position is mounted between the two legs (1, 2), while being positioned by its ends between two bosses respectively formed on the inner side of the posterior parts (4, 5) of the two legs (1, 2) respectively, while* the parts forming jaws of the two legs (1, 2), made of a relatively hard material, are lined internally with a covering (11; 17, 18) made of a relatively flexible material, provided so as to form the surface (15, 16; 19, 20) contacting the clothes, *this surface resulting from the inner faces of the said covering (11) possessing an undulating profile (15, 16), or from the relatively smooth inner faces (19, 20) of the said covering (17, 18).*

Several features have been added to the main claim. With these additional features, the claimed clothes peg has become new and inventive. In the assessment of the claim in the patent application in paragraph subsection 3.8.1 three embodiments of the invention are disclosed.

Which of the three embodiments still fall within the scope of protection of the main claim as granted?

Clothes peg embodiment	**Falls under scope of the granted claim?**
	Click for answer.
	Click for answer.
	Click for answer.

You see that the scope of protection of the granted patent is reduced compared to the patent application. This also indicates the importance of the dependent claims and of a sufficiently detailed and complete description.

The claims can then be modified with additional features mentioned in the dependent claims or the description. With these additional features it is possible to overcome the objections to the granting of the patent. These features must already have been described in the patent application, as they can not be added later after the original filing of the application.

3.9.7 Patent family

You have seen from the example that a first patent application resulted in several equally granted patents in the different countries. These patent applications and granted patents have practically the same content. However, they are all published separately.

Most of these publications are included in the patent databases. However, when you are searching, you don't want to see every publication with the same content separately. That's not helpful. If you have seen one, you also know the content of the other publications.

In the patent databases, the publications are therefore grouped by family. A family of patents is therefore a collection of patent applications and patents that have the same content. The grouping is done automatically, using the relationship with the first filed application (the priority document) to group the documents. However, this may sometimes not be correct if a non-standard procedure has been followed.

3.10 After grant of the patent

It is only after the granting of the patent that it is clear what the exact scope of protection of the patent is. That is why the patent can only really be used to stop others using the invention once the patent has been granted. However, the work on the patent and also the costs and even risks are not over yet.

The following activities are still required:

1. You must discover potential infringement of your patent yourself. So you have to pay close attention to which competitor may be infringing.

2. You must also organize the stopping of a possible infringement yourself. Warn the potential infringer first and perhaps eventually even file a lawsuit. A lawsuit is not cheap. This will have to be taken into account when deciding on the strategy to be followed.

3. Even if your patent has been granted, you can still lose it. In the EP procedure, an opposition procedure is still possible within 9 months

after the grant. During an opposition procedure, third parties can object to the granted patent. In that case, the patent may still be rejected. It is also possible that the patent needs to be modified. This is comparable to the examination of the patent application.

The patent can also be attacked later through the courts by third parties. Also then is it possible that the patent will be declared invalid. This step is usually taken by third parties if they are accused of infringement.

4. To ensure that patent rights do not continue to exist for an unnecessarily long time, an annual maintenance fee must be paid. If payment is not made, the patent expires. If the patent does not have enough economic value, it is probably better not to maintain it any longer.

It is clear from the foregoing that the publications in the patent databases do not provide information about the status of a patent. This status must be looked up in the patent registers. Each country has its own patent register to administer this status. Some links to these registers can be found in section B.4.

Chapter 4

Using IP to make money with technical innovations

4.1 Introduction

In this chapter we will discuss the topic of strategic management and use of industrial property rights in companies. Copyrights do not belong to the industrial property rights, but they deserve a specific place in companies.

Here it is also important to distinguish ideas from inventions and innovations as they are often used throughout or amongst one another. We presented a working definition of inventions in section 3.4. While some ideas about new products and services may lead to new research and development and further product development and hence towards inventions, most of them will not be used in the process of innovation management. As such those ideas will not be translated into inventions incorporated into to valuable innovations in certain sectors of industry. Because, on the other hand an innovation is most often regarded as a new and tangible product or service which can be bought by customers in the market place thus creating economic growth.

In the next section we describe a number of common steps in a company's innovation process as the basis for the use of IP. In the following sections the use and exploitation of IP rights is discussed in the various steps throughout the innovation process.

4.2 Innovation process

Often innovation is a time and resources consuming process going through various phases from first idea, prototyping, validation to market entry of an novel product or process. Throughout that innovation process information

about IP can be used in multiple ways. In figure 4.1 this innovation process is schematically pictured.

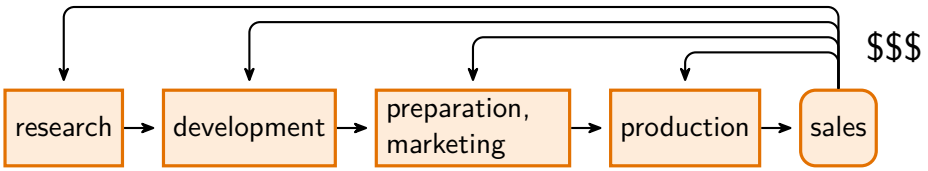


Figure 4.1: Proces from research to sale of product

Many companies start their innovation process by assigning market intelligence to one or more specialists. A state of the art research and necessary steps for product development may require significant time and resources depending on the sector of industry. For long term projects a company can decide to cooperate with a university for example for research ends working with scientists and PhD students. The goal of this phase in product development can be to ascertain proof of concept and bringing an idea for a novel product to the next stage.

At the development stage the product will be shaped towards the final version, although the manufacturing process at full scale is not yet determined. Since experts and engineers from various disciplines are involved in this stage, it can be time consuming and expensive.

Next, decisions about the output level of production and the layout of the factory have to be made during the production preparation phase before the start of a manufacturing process. Costs will usually depend on both the final product and sector of industry. For example building a construction plant for new cars can require initial investments of billions of euros.

Although marketing and sales do not seem a logical next step in an innovation process, they are of key importance. A successful market entry of new products will depend on sales to customers, thereby assuring that all investments and expenditures made earlier (like research and development, production engineering and marketing) will be earned back.

> Only the sales of the product generate revenues!

All steps in the innovation process prior to the stage of sales require adequate funding and investments. Those initial investments can be substantial while the return on these investments will be realised through sales. Using IP enables companies to create large enough margins when selling their innovative products to earn back those initial investments. Thus while IP contribute to the return on investment of companies, they can incentivize the market launch of their innovations at the same time. Conversely, intellectual properties only have value if a product is brought to market.

4.3 Using IP information for decision making throughout the innovation process

Using information from available intellectual properties in a timely manner is useful to avoid potential issues after market introduction of the product or to reduce certain costs throughout the innovation process.

In figure 4.2 the type of information that can be used and the moment of use is displayed.

We distinguish two kinds of analysis to retrieve and analyse such information;

1. patent landscape analysis

    a. Technical information about known solutions,
    b. Appropriated technical solutions with potential legal effect to take into account,
    c. A market analysis with names of competitors or potential partners

2. Freedom to Operate (FTO) analysis

    Information with potential infringement and risks assessment.

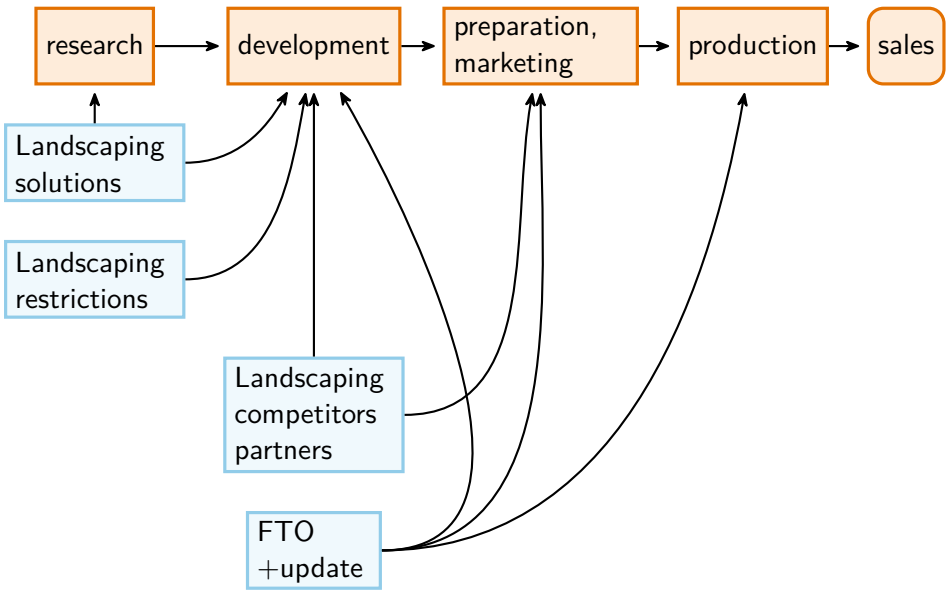


Figure 4.2: IP information in the process for a new product

4.3.1 Patent landscape analysis

In a global market companies and research organisations are surrounded by competitors and other actors. Using a patent landscape analysis one will acquire more information about them and about their technologies.

In a patent landscape analysis data can be analysed in three ways. Those three ways will generate useful data enabling easier decision making throughout different stages of the innovation process.

A. It is useful to create an overview of known technologies in order to be able to determine which problems and solutions need to be further analysed and developed within your organisation. For this analysis (technical) persons with knowledge of the subject-matter are necessary.

B. Prior to the decision to start developing a new product it is useful to study interesting technologies described by patents and pending patents. Search for possible technical solutions that may come close to the research and development of the organisation. Both technical and (legal) patent knowledge are required for these analyses. Analysing these data from a legal point of view may restrain your willingness to start a new innovation process. However, following decisions will depend on the business strategy of the organisation. Assuming that useful data have been retrieved and analysed one can decide to avoid potential litigation or infringement by redirecting the scope of research and development. A different strategy will be to license in the patents or start working as a partner of the patentee. These strategies will be further elaborated in next sections.

C. In addition to the technical and legal information from a patent landscape analysis, you can also obtain useful data for further market research. You can use this information to discover interesting countries, markets and possible partners for the sale of new products. It is also possible to analyze interesting markets in which you do not want or cannot be active yourself, but can become active through for example a partner.

4.3.2 Freedom to Operate (FTO) analysis

If the product reaches its final appearance at the end of the development phase, it could be useful to make an analysis about the risks to potential infringement of patents of third parties. An infringement of patents of third parties by may seriously hinder or even stop market introduction of a novel product or device. Such a risk assessment is called a Freedom to Operate analysis.

Throughout the patent landscape analysis one has analysed a first indication of potential infringement. But only when the the product is sufficiently specified and defined, an FTO analysis will be able to give sufficient certainty

of the risks. Until the moment that your product will become part of the state-of-the-art for example through sales, a publication or a patent, it is still possible that others will get IP rights that will hinder sales of the products. Therefore it is useful to update the FTO analysis.

An FTO analysis requires both technical knowledge and legal IP expertise. Also knowledge about legal and financial risks is required. Due to that multidisciplinary character of such an FTO analysis costs are high. Therefore scope and nature of an FTO analysis better be aligned with the risks and business strategy of the company.

4.4 Strategic IP use

For companies it is important to determine which sort of IP rights are needed for launching successful innovations. Bigger companies and established firms have their own IP division with an IP strategy in place. In line with their strategy they usually start applying for a diversity of IP rights during the various stages of their innovation process. More in depth information about commonly used IP appropriation regimes by economic sector, products and process innovations can be found Cohen, Nelson, and Walsh [CNW00] and Scotchmer [Sco04], chapter 9.

We know that IP can enable companies to create enough margins once they sell their products to have a return on their investments thus incentivizing innovations. As IP proprietor the innovator may decide to stop competitors to bring the same product or process at the market price at lower costs or prices. Such mechanism is called a defensive IP strategy and is generally used by companies in the pharma sector. Economic literature about such a price mechanism enabled by product or process patents is described by Greenhalgh and Rogers [GR10] in chapters 1 and 2.

Figure 4.3 describes which kind of IP can be relevant in certain stages of the innovation process.

During research and development leading to technical innovations patents often are used. When publishing articles about scientific results at universities copyrights are important. Depending on the sector of industry in which a company is operational designs becomes relevant at the stage when the product will have a clearly defined outer shape and the shape needs to be easily recognizable by customers.

Brands are important for the marketing of products and services. In the interest of marketing designs can be used as well.

Know-how (secrets) about certain features in a manufacturing technology process, for example the use of parts are regarded as yet another intellectual property. If a company has a more offensive IP strategy patents can be used

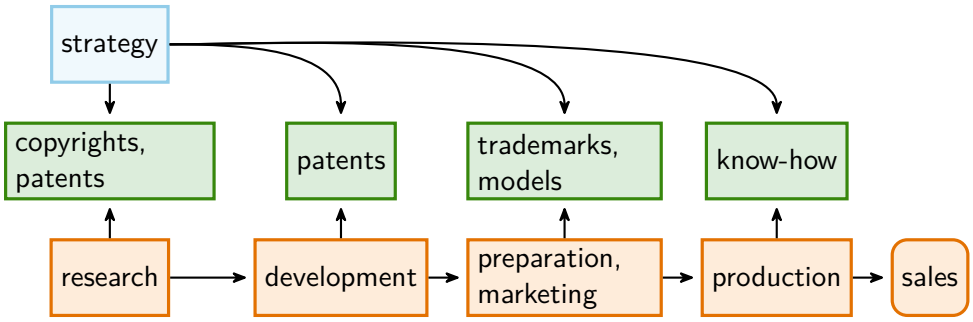


Figure 4.3: Generating IP with a new product

for (parts of) the manufacturing process. Such patented processes maybe out-licensed for example by companies in the chemical industry.

4.5 Purchasing and selling IP

In most economic sectors technologies are well developed at such a stage that many parts and processes are now available. Hence, there is no more reason to develop or manufacture those parts or processes. This is a huge difference compared with the upcoming economy at the start of the industrial revolution when manufacturers needed to have all parts and manufacturing processes in house by themselves. For example: the Ford Company wanted to have their own rubber plantations for the production of the tyres.

During the stage of research and development it is useful to analyse which technology, semi-finished products or parts can be purchased from others. Next the company can decide what needs further development by itself. Such strategy is also useful to identify interesting technologies developed by others which may solve technical problems and can be applied for further use. If these technologies have been appropriated in a patent portfolio of others they cannot be use as such without further analysis. Maybe there is a possibility to acquire ownership by assignment or come to terms in a license agreement.

4.5.1 Inlicensing patented technologies

A company may decide to obtain a license for a technology in order to start production and sales easier or faster. The results from a patent landscape analysis or Freedom to Operate may show that such a technology already exists or even that obtaining such a license agreement from a licensor is compulsory given the legal situation. Obviously, further information about the legal status on the validity of the patent in the country where the licensee

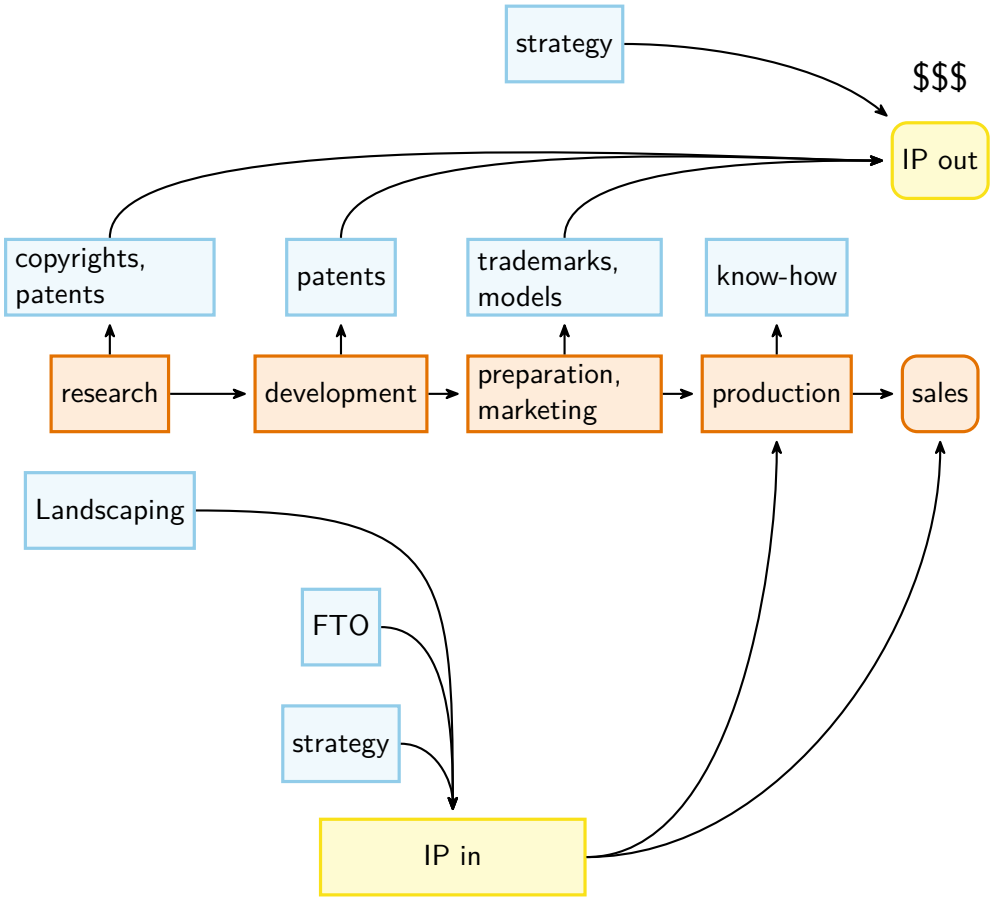


Figure 4.4: IE in and out

is operating is then required. For example if a Dutch manufacturer who is only working in the Netherlands needs certain technology the patent from the licensor should be valid in the Netherlands.

The business strategy and market perspectives are key in the decision making process to use licenses on technologies from third parties. But a patent landscape analysis is a useful business tool for companies with limited budgets for research and development. Next the company can contact the original patentee to start negotiations to obtain necessary patent licenses depending on its results. This is called inlicensing and presented as "IP in" in figure 4.4.

4.5.2 Outlicensing patented technologies

Usually a company decides to start production in a country or for a market by itself or by approaching others. Licensing technologies to others or franchising enables the patentee to do both. Such strategic decisions are often taken at central level of a multinational company or organisation and then followed up at decentral level.

But even if the patentee decides not to commercialise the technology itself, licensing to third parties remains an interesting option for example for organisations without production capacity in a particular country or market or a sales force. This is called outlicensing technologies and presented by "IP out" in figure 4.4. Outlicensing is often used successfully in cooperation with companies who are already active in certain markets and regions using the outlicensed technology to diversify their supply chain of products. Often the patentee is required to show successful sales records in an established home market for its patented technology.

4.5.3 Using patents in IP strategies

Depending on business strategy and use of IP a company can decide to outlicense their patent portfolio enabling others introducing new products or using manufacturing processes. Thereby allowing other companies to generate revenues without prior investments (in research and development, manufacturing, marketing, etc.) which were made by the patentee. This is called an offensive IP strategy which maybe more relevant for companies with products based upon a platform technology or compound with a large and diverse scope of applications.

On the other hand, companies may have a defensive IP strategy in the markets thereby stopping competitors selling look alike products to customers at lower prices. A large portfolio of nationally registered patented products in many countries is usually a prerequisite. Such a strategy may be relevant

for companies with patented products based upon very narrowly defined technologies and compounds which can easily be copied or circumvented.

Which IP strategy a company can use will depend on its market position at present and foreseeable future versus those of competitors. A patent landscape analysis gives interesting insights and a global overview on certain technical developments over the years. Such information is useful to determine the market position as defined by patents and can contribute in the decision making process which IP strategy best be followed. At the same time with this analysis one can retrieve information about the patent strategy of competitors.

Chapter 5

Using IP for specific topics

5.1 Introduction

In this chapter the use of IP for specific topics is described. These topics are not linked to a specific activity as e.g. mentioned in chapter 4 and are of more general use.

Since software is nowadays very important in many parts of innovation and in society this topic is especially dealt with in section 5.2 and for open-source software in section 5.3.

5.2 Software

Computer programs are primarily protected by copyright.

Sometimes a patent can also be obtained on software-related inventions. Computer programs as such cannot be protected by patent law.

5.2.1 Copyright on software

Historically, there has been a long debate about whether software should be protected under patent law, copyright law or a separate legal regime. Ultimately, it was decided to protect software primarily under copyright law. This was a practical choice. Because software is written in programming language, it can be expressed as a kind of text. That is why computer programs are protected as literary works under copyright law. This principle is laid down in Article 10, paragraph 1, of the TRIPs Agreement and Article 4 of the WIPO Copyright Treaty.

Copyright protection of software relates to the concrete expression of the computer program, i.e. the specific form in which the programmer has expressed his intellectual creation in the source code. The source code concerns the instructions written by the programmer in a programming language and readable by humans. The target code is also subject to copyright protection. The object code comprises the binary, computer-readable and executable instructions generated from the source code by a compiler or interpreter. The object code is therefore in fact the translation of the source code into a computer-readable form.

The same conditions apply to copyright protection of software as to any other work. The source code and object code must demonstrate originality. They may not be derived from earlier software and the programmer must have made creative choices when writing the source code. If these conditions are met, the computer program is legally protected under copyright.[1]

Copyright does not protect an idea underlying a work. This means that the functionality, logic, method or purpose of a computer program and the processes, procedures, algorithms, programming languages and layout of data files that are used in the context of a computer program to be able to use certain functions of the program are not protected by copyright.

Copyright does not create a monopoly on the functionality of software. It grants the creator or right holder exclusive rights to permit or prohibit the reproduction (copying or editing) and publication (publishing, marketing, lending, renting or making available on demand) of a computer program. However, the creator or right holder cannot prohibit others from developing their own computer programs that pursue the same or similar purpose or functionality.

Copyright on software largely follows the same rules as those that apply to any other work. For example, the rules for authorship and legal succession are the same, right holders are entitled to the same broad exploitation rights and the term of protection is determined in the same way. However, there are a few special provisions concerning computer programs that are recorded in Chapter VI of the Copyright Act.

Based on the right of reproduction, the right holder may prohibit others from copying or taking over the computer program in whole or in part or from changing the source code. The law also stipulates that the right of reproduction also includes reproductions that are necessary for loading, displaying, executing, transmitting or storing the computer program. Someone who has lawfully obtained the software, such as the person who has purchased a computer program, may make these reproductions to the extent necessary

[1] Preparatory design material can also be protected by copyright, provided that no programming step with creative steps is needed to turn that material into a computer program.

for the use of the computer program. The lawful acquirer may also make a backup copy if this is necessary for the intended use.

In addition, the law permits the operation of software to be observed, studied and tested in order to discover the underlying ideas and principles. There is therefore an explicit authority to 'reverse-engineer' the software.

Furthermore, the 'decompilation' of a computer program, the reconstruction of a source code based on the target code, is permitted under certain circumstances. The law stipulates that a computer program may be decompiled, not in order to create a competing program that imitates the decompiled software, but to create compatible programs that can communicate with the decompiled software and are therefore interoperable. Furthermore, it follows from case law that decompilation is permitted to correct errors in the proper functioning of a computer program.

Graphical user interface and other elements

When executing a computer program on a computer, users are primarily confronted with the graphical user interface (GUI). These are the visual elements that enable the user to communicate with a computer program and thus instruct the program (software) to control the computer (hardware). Think of the various icons in the taskbar or the menu of a computer program.

However, the GUI itself is not a computer program. The special provisions regarding computer programs therefore do not apply to GUIs. A GUI can be independently protected by copyright, if the designer has made creative choices in the design of the interface. When decompiling a computer program for the purpose of interoperability or error correction, the source code may be reconstructed on the basis of the target code, but the GUI may not also be copied to the extent that it is protected by copyright. That would infringe the copyright on the GUI.

The same applies to the graphic and sound elements of, for example, video games. These can be independently protected by copyright if they are the creator's own intellectual creation, but do not themselves qualify as a computer program.

Video games

Video games generally consist of different types of works. In addition to software (source and target code), many video games contain a storyline, characters, images, animations, video, music and texts. Provided that the requirements are met, each of these

works enjoys copyright protection. In principle, the copyright on the various works can lie with different creators. Sometimes hundreds of people can have made a creative contribution to a single video game. Because permission must be obtained from each rights holder for the release of the video game, the large number of rights holders can greatly hinder exploitation.

In practice, it is therefore arranged that all copyrights on the video game are, as much as possible, in the hands of the producer of the video game. The Copyright Act already provides for this to some extent. Insofar as creators have contributed to a video game under employment, the copyrights are in principle already held by the producer as employer under the law. For components of a video game that have been created by freelancers on assignment, the producer will usually have the copyrights contractually transferred to him. In addition, the producer can stipulate that the creator waives the right to mention his name, so that the rights are automatically granted to his/her company. For existing works that are included in a video game, such as the music that plays in the background of a video game, the producer will usually arrange permission by concluding a license agreement with the relevant copyright holders.

5.2.2 Software patent law

The starting point of patent law is that software as such cannot be patented, because computer programs are not considered inventions. However, the term invention contains the requirement of technical nature. A computer program that has a 'further technical effect' when executed on a computer, beyond the effect of the normal control of the computer, can therefore be patented. The computer program must provide a technical solution to a technical problem. Inventions with software must also meet the patent law requirements of novelty, inventive step and industrial applicability (see section 3.5).

Examples of computer programs that have a 'further technical effect' when executed on a computer are programs for controlling an anti-lock braking system (ABS) in cars, determining emissions from X-ray equipment, compressing data, encrypting electronic communications, restoring distorted digital images or training artificial intelligence. A 'further technical effect' can also concern the internal functioning or security of the computer. For example, programs for distributing the processor load, memory allocation or securing integrity during start-up offer a technical solution to a technical problem.

Patent protection is broader than copyright protection in the sense that patent law does grant a temporary monopoly on the technical functionality of the software-related invention. Patent law gives the holder the exclusive right to prohibit others from applying and using the patented invention for commercial purposes. It is therefore not permitted to market computer programs with the same 'further technical effect', or an effect that is more or less equivalent, during the period that the patent is valid.

5.2.3 Other ways to protect software

In addition to copyright protection of computer programs and patent protection of software-related inventions, software or parts thereof can also be protected by other intellectual property rights. For example, the source code of computer programs can be protected as a trade secret. Graphic features of computer programs, such as icons or pictograms of the graphic user interface, can be protected as drawings under design and model law, provided of course that the specific protection conditions are met.

In addition, the producer of software can of course contractually agree on additional protection with third parties, for example in license agreements.

Software can of course also be protected technologically, by security measures such as encryption methods and copy protection. The Copyright Act offers protection against circumvention of such technological protection measures.

5.3 Example of IP use in open source software

Open source software, or alternatively also called free software (free as freedom and not necessarily free as in a free beer), aims to make the software available to everyone and to be developed jointly.

Part of this software is in the public domain and another part is licensed. Well-known licenses are the GPL (GNU General Public License) or the BSD (Berkely Software Distribution) license. These licenses allow the use of the software under certain conditions. The user must therefore comply with those conditions and is not free to do everything.

Question:

> How can the terms of the open source licenses be enforced if the source code is publicly available? Click for answer.

Although the open source movement mainly originated in the academic world, there are now many large companies that develop open source software. These companies use the joint development to offer products and services around the open source software.

5.4 Example of IP use with standards

5.4.1 VESA (Video Electronics Standards Association)

Vesa is a non-profit corporation, which represents more than 300 companies. These companies are members of the corporation. It sets and supports interface standards for computers and consumer electronics.

The vision statement (from the website):

> VESA's vision is continual growth in technical standards development and evolution into an international trade association, with world-wide membership driving standards initiatives, product implementations, and market implementation.

5.4.2 Displayport

The displayport connection between a computer and a monitor is an important Vesa standard. The Vesa members are allowed to use the displayport logo on their products if these meet the requirements of the standard. In figure 5.1 the logo is displayed.

Figure 5.1: Displayport logo

Question:

> How can the use of the logo be limited to members who comply to the standard? Click for answer.

Appendix A

Glossary

B

BOIP

Benelux Office for Intellectual Property. The Benelux Office for Intellectual Property (dutch BBIE: Benelux-Bureau voor de Intellectuele Eigendom, french: Office Benelux de la Propriété intellectuelle) registers trademarks and designs for the Benelux. 56

C

claims

The claims are part of a patent to define the scope of protection. Usually, the set of claims consists of a main claim with several dependent claims. 22, 25

D

diversify

Diversification gives companies the opportunity to expand their range of products and services. 43

DPMA

Deutsches Patent- und Markenamt. The German Patent and Trademark Office is tasked with the granting of patents and trademarks for Germany. 56

E

EPC

European Patent Convention. A multilateral treaty to provide the legal system for granting European patents. Next to articles and rules for obtaining a patent, it also institutes the European Patent Organisation. In German: EPÜ, French: CBE. The European Patent Office is tasked with the granting of the European patents. 18, 52, 62

EPO

European Patent Office. The European Patent Office is tasked with the granting of the European patents according the EPC. Main seat in Munich with dependancies in Rijswijk, Berlin and Vienna. 18, 25, 28, 56

EUIPO

European Union Intellectual Property Office. The European Union Intellectual Property Office registers trademarks and designs for the EU. 56

examiner

The person working at a patent office, who will do the substantive examination (search report and grant) of a patent application. 26

exhaustion

If a patent, trademark or design holder, or someone else with the permission of the holder, has sold a product, he can no longer use the patent, trademark or design right for that product. 19

F

Freedom to Operate

Freedom to Operate (FTO) is a study that analyzes potential risks of possible infringement of third party patents when introducing a new product to the market. 38, 39, 41

I

industrial property rights

Industrial property rights are all intellectual property rights except copyright. 36

innovation

Innovation is most often regarded as a new and tangible product or service which can be bought by customers in the market place. 36

intellectual properties

Intellectual property is a category of property that includes intangible creations of the human intellect. 6, 37, 38, 53

intellectual property rights

Intellectual Property Rights are the legal rights for creators over the creations of the minds. Intellectual property rights include patents, copyright, industrial design rights, trademarks, plant variety rights, trade dress, geographical indications, and in some jurisdictions trade secrets. 6, 53

IP

Intellectual Property. See also the description of intellectual properties and intellectual property rights in the glossary. 2, 6, 7, 9, 13, 37, 40, 43, 45, 53

IPR

Intellectual Property Rights are the legal rights for creators over the creations of their minds. See also the description of intellectual property rights and intellectual properties in the glossary. 6, 8, 9

J

JPO

Japan Patent Office. The Japan Patent Patent Office is tasked with the granting of patents and trademarks for Japan. 56

L

license

Meaning of license when used in IP: The right to commercially use a product or service to which another legal entity has intellectual property rights, on the basis of financial or material compensation. 41

O

Octrooicentrum Nederland

The Netherlands Patent Office is the patent office of the Netherlands. The Netherlands Patent Office is a department of the Netherlands Enterprise Agency, an agency of the Ministry of Economic Affairs and Climate Policy. The Netherlands Patent Office grants patents in the Netherlands and deals with European patents validated in the Netherlands. 18, 56

P

patent

A patent is an intellectual property right for an invention. 9, 17

patent landscape analysis

A patent landscape analysis provides a worldwide overview of patent holders who have technology in the economic sector of your organization. This gives you both market and product information of existing technology. With the help of this analysis, you can adjust research and development in time or decide to apply for a license from the patent holder for your market. 38, 39, 41, 44

PCT

Patent Cooperation Treaty. The Patent Cooperation Treaty is an international patent law treaty. It provides a unified procedure for filing patent applications to protect inventions in each of its contracting states. A patent application filed under the PCT is called an international application, or PCT application. 18, 25, 28, 30, 65

person skilled in the art

The term person skilled in the art, as used in patent law, is a constructed virtual person with knowledge and skill of a (broad) technical field. The person skilled in the art knows the entire state of the art, but has no inventive capacity. This constructed person skilled in the art is used in drawing up arguments, especially in the case of inventive step, sufficient disclosure and clarity of the patent application. 20–22

priority

A patent application can get right of priority from an earlier filing. This has the effect as if the patent application is filed on the date of the earlier filing. 31

R

ROW

National Patents Act 1995. Law for patents valid in the Netherlands, including the Caribbean, Curaçao and Sint Maarten. 18, 61

S

search report

The search report is prepared by the patent office where the patent application has been filed. It is used to assess novelty and inventive

step during the examination of the patent. It therefore contains the most relevant documents that are used in the examination. 26, 28

state of the art

The state of the art is formed by everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the patent application 20, 26, 37

U

USPTO

United States Patent and Trademark Office. The United States Patent and Trademark Office is tasked with the granting of patents and trademarks for the United States of America. 56

W

WIPO

World Intellectual Property Organisation. The World Intellectual Property Organization is one of the 15 specialized agencies of the United Nations (UN). WIPO administers 26 international treaties that concern a wide variety of intellectual property issues, ranging from the protection of audiovisual works to establishing international patent classification. WIPO currently has 193 member states and is headquartered in Geneva, Switzerland. 18, 28, 56

Appendix B

Links

B.1 National and international IP offices

Netherlands patent office (Octrooicentrum Nederland):
https://www.rvo.nl/onderwerpen/innovatief-ondernemen/octrooien-ofwel-patenten

Benelux Office for Intellectual Property (BOIP):
https://www.boip.int/

European Patent Office (EPO):
https://www.epo.org/

European Union Intellectual Property Office (EUIPO):
https://www.euipo.europa.eu/

World Intellectual Property Organisation (WIPO):
https://www.wipo.int/

German patent office (DPMA):
https://www.dpma.de/

United States Patents and Trademark Office (USPTO):
https://www.uspto.gov/

Japan Patent Office (JPO):
https://www.jpo.go.jp/e/

B.2 Additional information

ThatsIP E-learning Intellectuel Property:
https://www.thatsip.nl/en/
Netherlands patent office, videos explaining basics of patents:
https://www.rvo.nl/onderwerpen/octrooien-ofwel-patenten/uitlegvideos

UK Intellectual Property Office, videos on IP basic, case studies and others:
https://www.youtube.com/user/ipogovuk

Werkgemeenschap Octrooi-informatie Nederland (WON):
http://www.won-nl.org

B.3 Interesting publications from the WIPO

What is Intellectual Property?
https://www.wipo.int/publications/en/details.jsp?id=4528&plang=EN

Intellectual Property Basics: A Q&A for Students
https://www.wipo.int/publications/en/details.jsp?id=4410&plang=EN

Understanding Industrial Property
https://www.wipo.int/publications/en/details.jsp?id=4080&plang=EN

Inventing the Future
An Introduction to Patents for Small and Medium-sized Enterprises
https://www.wipo.int/publications/en/details.jsp?id=4350&plang=EN

Enterprising Ideas
A Guide to Intellectual Property for Startups
https://www.wipo.int/publications/en/details.jsp?id=4545&plang=EN

Guide to the International Patent Classification (2022)
https://www.wipo.int/publications/en/details.jsp?id=4593&plang=EN

International Patent Classification (IPC)
https://www.wipo.int/publications/en/details.jsp?id=4582&plang=EN

B.4 IP databases

Espacenet:
https://worldwide.espacenet.com/patent/

Espacenet pocket guide:
https://www.epo.org/espacenet-pocket-guide

Manual Espacenet (Dutch):
https://www.rvo.nl/sites/default/files/2021/03/Handleiding%20Espacenet_februari2021.pdf

European Patent Register:
https://register.epo.org/

European Patent Bulletin:
https://data.epo.org/expert-services/index.html

Google patents:
https://patents.google.com/

Depatisnet (DPMA):
https://depatisnet.dpma.de/DepatisNet/depatisnet

Patentscope:
https://patentscope.wipo.int/

The lens:
https://www.lens.org/

Trademark view and Design view:
https://www.tmdn.org/

EUIPO register (eSearch plus):
https://euipo.europa.eu/eSearch/

BOIP trademark register:
https://www.boip.int/en/trademarks-register

BOIP design register:
https://www.boip.int/en/designs-register

Register of the Netherlands patent office:
https://mijnoctrooi.rvo.nl/fo-eregister-view/

Register of the German patent office (DPMA register):
https://register.dpma.de/DPMAregister/pat/basis

UK Intellectual Property Office, online patent information and document inspection service:
https://www.ipo.gov.uk/p-ipsum.htm

Japan platform for patent information:
https://www.j-platpat.inpit.go.jp/

B.5 The patent classification schemes

CPC classification scheme at the USPTO (US patent and trademark office):
https://www.uspto.gov/web/patents/classification/cpc/html/cpc.html

CPC classification scheme in table to download scheme and definitions:
https://www.cooperativepatentclassification.org/cpcSchemeAndDefinitions/table

Appendix C

Bibliography

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Appendix D

Parts of IP law

D.1 Parts of the Dutch patent law, Rijksoctrooiwet 1995 (in Dutch)

These are some of the most relevant parts of Dutch patent law (ROW).

- Artikel 53
    1. Een octrooi geeft de octrooihouder, behoudens de bepalingen van de artikelen 53a tot en met 60, het uitsluitend recht:
        a. het geoctrooieerde voortbrengsel in of voor zijn bedrijf te vervaardigen, te gebruiken, in het verkeer te brengen of verder te verkopen, te verhuren, af te leveren of anderszins te verhandelen, dan wel voor een of ander aan te bieden, in te voeren of in voorraad te hebben;
        b. de geoctrooieerde werkwijze in of voor zijn bedrijf toe te passen of het voortbrengsel, dat rechtstreeks verkregen is door toepassing van die werkwijze, in of voor zijn bedrijf te gebruiken, in het verkeer te brengen of verder te verkopen, te verhuren, af te leveren of anderszins te verhandelen, dan wel voor een of ander aan te bieden, in te voeren of in voorraad te hebben.
    2. Het uitsluitend recht wordt bepaald door de conclusies van het octrooischrift, waarbij de beschrijving en de tekeningen dienen tot uitleg van die conclusies.
    3. Het uitsluitend recht strekt zich niet uit over handelingen, uitsluitend dienende tot onderzoek van het geoctrooieerde, daaronder begrepen het door toepassing van de geoctrooieerde werkwijze rechtstreeks verkregen voortbrengsel. Het uitsluitend recht strekt zich evenmin uit tot de bereiding voor direct gebruik ten

behoeve van individuele gevallen op medisch voorschrift van geneesmiddelen in apotheken, noch tot handelingen betreffende de aldus bereide geneesmiddelen.

4. Het uitvoeren van de noodzakelijke studies, tests en proeven met het oog op de toepassing van artikel 10, eerste tot en met vierde lid, van Richtlijn 2001/83/EG tot vaststelling van een communautair wetboek betreffende geneesmiddelen voor menselijk gebruik (PbEG L 311) of artikel 13, eerste tot en met het vijfde lid van Richtlijn 2001/82/EG tot vaststelling van een communautair wetboek betreffende geneesmiddelen voor diergeneeskundig gebruik (PbEG L 311) en de daaruit voortvloeiende praktische vereisten worden niet beschouwd als een inbreuk op octrooien met betrekking tot geneesmiddelen voor menselijk gebruik, respectievelijk geneesmiddelen voor diergeneeskundig gebruik.
5. Is een voortbrengsel als in het eerste lid, onder a of b, bedoeld, in Nederland, Curaçao of Sint Maarten rechtmatig in het verkeer gebracht, dan wel door de octrooihouder of met diens toestemming in één der Lid-Staten van de Europese Gemeenschap of in een andere staat die partij is bij de Overeenkomst betreffende de Europese Economische Ruimte in het verkeer gebracht, dan handelt de verkrijger of latere houder niet in strijd met het octrooi, door dit voortbrengsel in of voor zijn bedrijf te gebruiken, te verkopen, te verhuren, af te leveren of anderszins te verhandelen, dan wel voor een of ander aan te bieden, in te voeren of in voorraad te hebben.
6. Een voortbrengsel als in het eerste lid, onder a of b, bedoeld, dat voor de verlening van het octrooi, of, indien het een Europees octrooi betreft, voor de dag, waarop overeenkomstig artikel 97, derde lid, van het Europees Octrooiverdrag de vermelding van de verlening van het Europees octrooi is gepubliceerd, in een bedrijf is vervaardigd, mag niettegenstaande het octrooi ten dienste van dat bedrijf worden gebruikt.

D.2 Parts of the European Patent Convention

These are some of the most relevant parts of patent law in the European Patent Convention (EPC).

- Article 52. Patentable inventions

  (1) European patents shall be granted for any inventions, in all fields of technology, provided that they are new, involve an inventive step and are susceptible of industrial application.

(2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1:
   a) discoveries, scientific theories and mathematical methods;
   b) aesthetic creations;
   c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
   d) presentations of information.

(3) Paragraph 2 shall exclude the patentability of the subject-matter or activities referred to therein only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such.

- Article 54. Novelty

(1) An invention shall be considered to be new if it does not form part of the state of the art.

(2) The state of the art shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application.

(3) Additionally, the content of European patent applications as filed, the dates of filing of which are prior to the date referred to in paragraph 2 and which were published on or after that date, shall be considered as comprised in the state of the art.

(4) Paragraphs 2 and 3 shall not exclude the patentability of any substance or composition, comprised in the state of the art, for use in a method referred to in Article 53(c), provided that its use for any such method is not comprised in the state of the art.

(5) Paragraphs 2 and 3 shall also not exclude the patentability of any substance or composition referred to in paragraph 4 for any specific use in a method referred to in Article 53(c), provided that such use is not comprised in the state of the art.

- Article 56. Inventive step

An invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art. If the state of the art also includes documents within the meaning of Article 54, paragraph 3, these documents shall not be considered in deciding whether there has been an inventive step.

- Article 83. Disclosure of the invention

The European patent application shall disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

- Article 84. Claims

  The claims shall define the matter for which protection is sought. They shall be clear and concise and be supported by the description.

- Article 87. Priority right

  (1) Any person who has duly filed, in or for
  (a) any State party to the Paris Convention for the Protection of Industrial Property or
  (b) any Member of the World Trade Organization,
  an application for a patent, a utility model or a utility certificate, or his successor in title, shall enjoy, for the purpose of filing a European patent application in respect of the same invention, a right of priority during a period of twelve months from the date of filing of the first application.
  (2) Every filing that is equivalent to a regular national filing under the national law of the State where it was made or under bilateral or multilateral agreements, including this Convention, shall be recognised as giving rise to a right of priority.
  (3) A regular national filing shall mean any filing that is sufficient to establish the date on which the application was filed, whatever the outcome of the application may be.
  (4) A subsequent application in respect of the same subject-matter as a previous first application and filed in or for the same State shall be considered as the first application for the purposes of determining priority, provided that, at the date of filing the subsequent application, the previous application has been withdrawn, abandoned or refused, without being open to public inspection and without leaving any rights outstanding, and has not served as a basis for claiming a right of priority. The previous application may not thereafter serve as a basis for claiming a right of priority.
  (5) If the first filing has been made with an industrial property authority which is not subject to the Paris Convention for the Protection of Industrial Property or the Agreement Establishing the World Trade Organization, paragraphs 1 to 4 shall apply if that authority, according to a communication issued by the President of the European Patent Office, recognises that a first filing made with the European Patent Office gives rise to a right of priority under conditions and with effects equivalent to those laid down in the Paris Convention.

- Article 88. Claiming priority

  (1) An applicant desiring to take advantage of the priority of a previous application shall file a declaration of priority and any other

document required, in accordance with the Implementing Regulations.

(2) Multiple priorities may be claimed in respect of a European patent application, notwithstanding the fact that they originated in different countries. Where appropriate, multiple priorities may be claimed for any one claim. Where multiple priorities are claimed, time limits which run from the date of priority shall run from the earliest date of priority.

(3) If one or more priorities are claimed in respect of a European patent application, the right of priority shall cover only those elements of the European patent application which are included in the application or applications whose priority is claimed.

(4) If certain elements of the invention for which priority is claimed do not appear among the claims formulated in the previous application, priority may nonetheless be granted, provided that the documents of the previous application as a whole specifically disclose such elements.

- Article 89. Effect of priority right

  The right of priority shall have the effect that the date of priority shall count as the date of filing of the European patent application for the purposes of Article 54, paragraphs 2 and 3, and Article 60, paragraph 2.

D.3 Parts of the Patent Cooperation Treaty

These are some of the most relevant parts of Patent Cooperation Treaty (PCT).

- Article 5. The Description

  The description shall disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art.

- Article 6. The Claims

  The claim or claims shall define the matter for which protection is sought. Claims shall be clear and concise. They shall be fully supported by the description.

- Article 8. Claiming Priority

  (1) The international application may contain a declaration, as prescribed in the Regulations, claiming the priority of one or more

earlier applications filed in or for any country party to the Paris Convention for the Protection of Industrial Property.

(2) (a) Subject to the provisions of subparagraph (b), the conditions for, and the effect of, any priority claim declared under paragraph (1) shall be as provided in Article 4 of the Stockholm Act of the Paris Convention for the Protection of Industrial Property

(b) The international application for which the priority of one or more earlier applications filed in or for a Contracting State is claimed may contain the designation of that State. Where, in the international application, the priority of one or more national applications filed in or for a designated State is claimed, or where the priority of an international application having designated only one State is claimed, the conditions for, and the effect of, the priority claim in that State shall be governed by the national law of that State.

- Article 33. The International Preliminary Examination

(1) The objective of the international preliminary examination is to formulate a preliminary and non-binding opinion on the questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), and to be industrially applicable.

(2) For the purposes of the international preliminary examination, a claimed invention shall be considered novel if it is not anticipated by the prior art as defined in the Regulations.

(3) For the purposes of the international preliminary examination, a claimed invention shall be considered to involve an inventive step if, having regard to the prior art as defined in the Regulations, it is not, at the prescribed relevant date, obvious to a person skilled in the art.

(4) For the purposes of the international preliminary examination, a claimed invention shall be considered industrially applicable if, according to its nature, it can be made or used (in the technological sense) in any kind of industry. "Industry" shall be understood in its broadest sense, as in the Paris Convention for the Protection of Industrial Property.

(5) The criteria described above merely serve the purposes of international preliminary examination. Any Contracting State may apply additional or different criteria for the purpose of deciding whether, in that State, the claimed invention is patentable or not.

(6) The international preliminary examination shall take into consideration all the documents cited in the international search report.

It may take into consideration any additional documents considered to be relevant in the particular case.

- Rule 64. Prior Art for International Preliminary Examination

  64.1 Prior Art

  (a) For the purposes of Article 33(2) and (3), everything made available to the public anywhere in the world by means of written disclosure (including drawings and other illustrations) shall be considered prior art provided that such making available occurred prior to the relevant date.
  (b) For the purposes of paragraph (a), the relevant date shall be:
    (i) subject to item (ii) and (iii), the international filing date of the international application under international preliminary examination;
    (ii) where the international application under international preliminary examination claims the priority of an earlier application and has an international filing date which is within the priority period, the filing date of such earlier application, unless the International Preliminary Examining Authority considers that the priority claim is not valid;
    (iii) where the international application under international preliminary examination claims the priority of an earlier application and has an international filing date which is later than the date on which the priority period expired but within the period of two months from that date, the filing date of such earlier application, unless the International Preliminary Examining Authority considers that the priority claim is not valid for reasons other than the fact that the international application has an international filing date which is later than the date on which the priority period expired.

  64.2 Non-Written Disclosures

  In cases where the making available to the public occurred by means of an oral disclosure, use, exhibition or other non-written means ("non-written disclosure") before the relevant date as defined in Rule 64.1(b) and the date of such non-written disclosure is indicated in a written disclosure which has been made available to the public on a date which is the same as, or later than, the relevant date, the non-written disclosure shall not be considered part of the prior art for the purposes of Article 33(2) and (3). Nevertheless, the international preliminary examination report shall call attention to such non-written disclosure in the manner provided for in Rule 70.9.

64.3 Certain Published Documents

In cases where any application or any patent which would constitute prior art for the purposes of Article 33(2) and (3) had it been published prior to the relevant date referred to in Rule 64.1 was published on a date which is the same as, or later than, the relevant date but was filed earlier than the relevant date or claimed the priority of an earlier application which had been filed prior to the relevant date, such published application or patent shall not be considered part of the prior art for the purposes of Article 33(2) and (3). Nevertheless, the international preliminary examination report shall call attention to such application or patent in the manner provided for in Rule 70.10.

Appendix E

Documents

E.1 WO 01/31108 A1

(12) DEMANDE INTERNATIONALE PUBLIÉE EN VERTU DU TRAITÉ DE COOPÉRATION EN MATIÈRE DE BREVETS (PCT)

(19) Organisation Mondiale de la Propriété Intellectuelle
Bureau international

(43) Date de la publication internationale
3 mai 2001 (03.05.2001)

PCT

(10) Numéro de publication internationale
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(21) Numéro de la demande internationale:
PCT/FR99/02607

(22) Date de dépôt international:
26 octobre 1999 (26.10.1999)

(25) Langue de dépôt: français

(26) Langue de publication: français

(71) Déposant *(pour tous les États désignés sauf US)*: **READ-MARK** [FR/FR]; ZAC de Sans Souci, 185, Allée des Cyprès, F-69760 Limonest (FR).

(72) Inventeurs; et

(75) Inventeurs/Déposants *(pour US seulement)*: **BARRÉ, Bertrand** [FR/FR]; 185, Allée des Cyprès, F-69760 Limonest (FR). **LEPAGE, Francis** [FR/FR]; 5, chemin de Montpellas, F-69009 Lyon (FR).

(74) Mandataire: **CABINET GERMAIN ET MAUREAU**; Boîte postale 6153, F-69466 Lyon Cedex 06 (FR).

(81) États désignés *(national)*: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

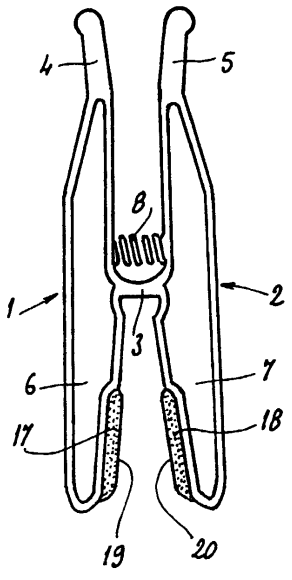
(84) États désignés *(régional)*: brevet ARIPO (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), brevet eurasien (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), brevet européen (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), brevet OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Publiée:
— *Avec rapport de recherche internationale.*

[Suite sur la page suivante]

(54) Title: CLOTHES PEG

(54) Titre: PINCE A LINGE



(57) Abstract: The clothes peg is essentially comprised of two limbs (1, 2) each comprising a front part (6, 7) forming a jaw, arranged opposite the corresponding jaw of the other limb. The two limbs (1, 2) are made of a relatively hard material and the parts forming a jaw (6, 7) are provided with an inner lining (17, 18) made of a relatively flexible material, forming a contact surface (19, 20) with the linen. Clothes are held by the inventive peg in a better manner, whereby marks are avoided.

(57) Abrégé: La pince à linge est constituée essentiellement de deux branches (1, 2) comportant chacune une partie antérieure (6, 7) formant mâchoire, située en regard de la mâchoire correspondante de l'autre branche. Les deux branches (1, 2) sont réalisées en un matériau relativement dur, et leurs parties formant mâchoires (6, 7) sont garnies intérieurement d'un revêtement (17, 18) en un matériau relativement souple, qui forme la surface de contact (19, 20) avec le linge. Une telle pince assure une meilleure tenue du linge, tout en évitant son "marquage".

WO 01/31108 A1

En ce qui concerne les codes à deux lettres et autres abréviations, se référer aux "Notes explicatives relatives aux codes et abréviations" figurant au début de chaque numéro ordinaire de la Gazette du PCT.

PINCE A LINGE

La présente invention concerne une pince à linge.

Les pinces à linge sont constituées, traditionnellement, de deux branches en bois ou en matière synthétique, identiques et montées en sens opposés, qui peuvent pivoter l'une par rapport à l'autre. Chaque branche comporte une partie postérieure formant bras de levier, et une partie antérieure formant mâchoire, située en regard de la mâchoire correspondante de l'autre branche, et coopérant avec cette autre mâchoire. Un ressort relie les deux branches et les sollicite dans le sens du serrage des mâchoires l'une contre l'autre, leur permettant ainsi de serrer une pièce de linge à suspendre pour son séchage.

On connaît aussi des pinces à linge en matière synthétique moulées d'une seule pièce, de manière à former les deux branches ainsi qu'une zone de liaison de faible épaisseur, formant charnière - voir par exemple les demandes de brevets EP 0 302 135, EP 0 641 882 et WO 93/23602.

Dans tous les cas, les branches des pinces à linge sont des pièces ou parties rigides, ce qui présente des inconvénients, notamment au niveau des mâchoires. Lorsque ces mâchoires possèdent une surface relativement lisse, le maintien du linge est insuffisant, et celui-ci risque de glisser et d'échapper à la pince, sous l'effet de son propre poids ou d'autres sollicitations, telles que le vent. Pour éviter cet inconvénient, les pinces à linge sont souvent pourvues de mâchoires à profil dentelé, qui réalisent un meilleur accrochage du linge ; cette configuration a toutefois pour inconvénient de "marquer" plus ou moins fortement le linge, aux endroits pincés.

La présente invention a pour but de remédier à ces inconvénients, en fournissant une pince à linge perfectionnée, qui améliore sensiblement le maintien du

linge tout en évitant son "marquage", la pince à linge proposée restant de structure simple et de fabrication économique.

A cet effet, dans la pince à linge objet de l'invention, les parties formant mâchoires des deux branches, réalisées en un matériau relativement dur, sont garnies intérieurement d'un revêtement en un matériau relativement souple prévu pour former la surface de contact avec le linge.

Ainsi, la pince à linge objet de l'invention possède, comme particularité essentielle, le fait d'être réalisée en deux matières distinctes, une matière plus souple étant prévue sur le côté intérieur des mâchoires. Cette matière souple forme des "tampons" qui, lors de l'utilisation de la pince, sont écrasés élastiquement et assurent ainsi un excellent maintien du linge, d'autant plus que la qualité de surface du matériau souple utilisé, tel que silicone ou mousse, s'oppose au glissement.

Ce matériau souple peut notamment prendre la forme de deux petits tampons distincts, fixés respectivement sur le côté intérieur des parties formant mâchoires des deux branches de la pince à linge.

Dans une variante, le matériau souple prend la forme d'une pièce unique, possédant un profil en "U", dont les deux ailes opposées sont fixées respectivement sur le côté intérieur des parties formant mâchoires des deux branches de la pince à linge. La souplesse du matériau constitutif d'une telle pièce en "U" lui permet naturellement de se déformer, pour "suivre" le mouvement relatif des deux branches, lors de l'ouverture ou de la fermeture de la pince à linge.

Diverses techniques de fabrication sont possibles, pour la fixation des parties en matière souple sur les deux branches réalisées en une matière plus dure.

En particulier, dans le cas d'une pince à linge dont les deux branches sont réalisées en matière

synthétique moulée, les parties en matériau souple peuvent être obtenues par une technique industrielle de bi-injection ou de surmoulage, assurant simultanément leur formation et leur fixation sur les branches correspondantes.

Les parties en matériau souple peuvent aussi être fixées par collage, ou par emboîtement, sur les deux branches réalisées en un matériau plus dur.

L'efficacité des parties en matériau souple peut être augmentée en élargissant ces parties, ainsi que les parties formant mâchoires des deux branches, par rapport au restant des branches de la pince à linge, ce qui permet à la fois :

- d'augmenter la surface de contact avec le linge, pour une meilleure tenue, et
- de répartir la pression de serrage sur une surface plus grande, pour limiter encore le risque de "marquage" du linge.

L'invention sera de toute façon mieux comprise à l'aide de la description qui suit, en référence au dessin schématique annexé représentant, à titre d'exemples, quelques formes d'exécution de cette pince à linge :

Figure 1 est une vue de face d'une première forme de réalisation de la pince à linge, objet de la présente invention ;

Figure 2 est une vue de face d'une deuxième forme de réalisation de cette pince à linge ;

Figure 3 est une vue de face d'une troisième forme de réalisation de cette pince à linge.

La figure 1 montre une pince à linge, qui comprend deux branches allongées 1 et 2, reliées l'une à l'autre en un point intermédiaire de leur longueur par un voile mince de matière 3. L'ensemble des deux branches 1 et 2 et du voile 3 est réalisé d'une seule pièce, par moulage, dans une matière synthétique relativement dure, le voile 3 conservant cependant, en raison de sa faible épaisseur,

une certaine flexibilité lui permettant de jouer le rôle d'une charnière. Chaque branche 1 ou 2 comporte une partie postérieure, respectivement 4 ou 5, formant bras de levier, et une partie antérieure, respectivement 6 ou 7, formant mâchoire. Un ressort hélicoïdal 8 de rappel en position de fermeture est monté entre les deux branches 1 et 2, le ressort 8 étant positionné, par ses extrémités, sur deux bossages 9 et 10 formés respectivement sur le côté intérieur des parties postérieures 4 et 5, situées en regard l'une de l'autre, des deux branches 1 et 2.

Les parties antérieures respectives 6 et 7 des deux branches 1 et 2, formant mâchoires, sont aussi situées en regard l'une de l'autre, et elles sont revêtues intérieurement d'un matériau souple. Plus particulièrement, dans la forme de réalisation illustrée par la figure 1, il est prévu une pièce unique 11 de profil en "U", en matériau souple tel que silicone ou mousse, qui forme deux ailes opposées 12 et 13 reliées entre elles par une zone intermédiaire 14. Les deux ailes 12 et 13 sont appliquées et fixées respectivement contre les faces intérieures des parties antérieures respectives 6 et 7 des deux branches 1 et 2, tandis que la zone intermédiaire 14 est appliquée contre le voile mince 3. Les faces intérieures 15 et 16 respectives des deux ailes 12 et 13, tournées l'une vers l'autre, possèdent un profil ondulé et constituent, lors de l'utilisation de la pince à linge, les surfaces de contact avec le linge. Grâce à la souplesse du matériau constitutif de la pièce 11, et à l'écrasement de ce matériau au niveau des ailes 12 et 13, le maintien du linge est amélioré, et le "marquage" indésirable de ce linge est évité. De plus, la souplesse de la pièce 11, notamment dans sa zone intermédiaire 14, lui permet de "suivre" la déformation du voile mince 3 et le mouvement relatif des deux branches 1 et 2, lors de l'ouverture ou de la fermeture de la pince à linge.

La figure 2 représente une pince à linge de même conception générale que celle de la figure 1, en ce qui concerne ses deux branches 1 et 2 et le voile de matière 3 reliant ces deux branches 1 et 2, cet ensemble étant encore réalisé d'une seule pièce en matière synthétique relativement rigide. Les parties antérieures respectives 6 et 7 des deux branches 1 et 2, formant mâchoires, reçoivent ici respectivement, sur leurs faces intérieures, deux petits tampons 17 et 18 en matériau souple, placés ainsi en vis-à-vis. Les tampons 17 et 18 sont positionnés en butée contre des épaulements des parties 6 et 7 formant mâchoires. Les faces intérieures 19 et 20 respectives de ces deux tampons 17 et 18, tournées l'une vers l'autre, sont ici relativement lisses et constituent, lors de l'utilisation de la pince à linge, les surfaces de contact avec le linge. Comme précédemment, grâce à la souplesse du matériau constitutif des deux tampons 17 et 18, et à l'écrasement de ces derniers, l'on obtient une très bonne tenue du linge, sans effet de "marquage".

La figure 3 illustre l'application de l'invention à un autre type de pince à linge, comprenant deux branches 1 et 2 sensiblement parallèles, solidarisées dans la partie postérieure 21 de la pince à linge, ce type de pince à linge étant notamment diffusé dans les pays du nord de l'Europe. Les parties antérieures respectives 6 et 7 des deux branches 1 et 2, formant ici encore mâchoires, sont comme dans les exemples précédents garnies d'un revêtement en matériau souple, en comparaison avec le restant de la pince qui est réalisé en matériau relativement dur, possédant toutefois une certaine élasticité dans la région des deux branches 1 et 2. La partie souple prend, ici encore, la forme de deux tampons 17 et 18 fixés sur les faces intérieures des parties antérieures respectives 6 et 7 des deux branches 1 et 2.

La fixation des deux tampons 17 et 18 en matière souple sur les parties antérieures respectives 6 et 7 des

deux branches 1 et 2 est réalisable, au cours de la fabrication des pinces à linge, selon divers procédés : bi-injection, surmoulage, collage, emboîtement, encliquetage.

Comme il va de soi, l'invention ne se limite pas aux seules formes d'exécution de cette pince à linge qui ont été décrites ci-dessus, à titre d'exemples ; elle en embrasse, au contraire, toutes les variantes de réalisation et d'application respectant le même principe. C'est ainsi, notamment, que l'on ne s'éloignerait pas du cadre de l'invention :

- en réalisant les parties souples avec d'autres formes et/ou dans d'autres matériaux adaptés ;
- en fixant ces parties souples sur les deux branches de la pince à linge par tout moyen ;
- en appliquant l'invention à des pinces à linge de tout type et de toute forme, dont les branches peuvent être réalisées en tout matériau relativement dur.

REVENDICATIONS

1 - Pince à linge, constituée essentiellement de deux branches (1, 2) comportant chacune une partie antérieure (6, 7) formant mâchoire, située en regard de la mâchoire correspondante de l'autre branche, caractérisée en ce que les parties formant mâchoires (6, 7) des deux branches (1, 2), réalisées en un matériau relativement dur, sont garnies intérieurement d'un revêtement (11 ; 17, 18) en un matériau relativement souple, prévu pour former la surface de contact (15, 16 ; 19, 20) avec le linge.

2 - Pince à linge selon la revendication 1, caractérisée en ce que ledit matériau souple est de la silicone ou de la mousse.

3 - Pince à linge selon la revendication 1 ou 2, caractérisée en ce que ledit matériau souple prend la forme de deux petits tampons distincts (17, 18), fixés respectivement sur le côté intérieur des parties formant mâchoires (6, 7) des deux branches (1, 2) de la pince à linge.

4 - Pince à linge selon la revendication 1 ou 2, caractérisée en ce que ledit matériau souple prend la forme d'une pièce unique (11), possédant un profil en "U", dont les deux ailes opposées (12, 13) sont fixées respectivement sur le côté intérieur des parties formant mâchoires (6, 7) des deux branches (1, 2) de la pince à linge.

5 - Pince à linge selon l'une quelconque des revendications 1 à 4, caractérisée en ce que, dans le cas d'une pince à linge dont les deux branches (1, 2) sont réalisées en matière synthétique moulée, les parties (11 ; 17, 18) en matériau souple sont obtenues par une technique de bi-injection ou de surmoulage.

6 - Pince à linge selon l'une quelconque des revendications 1 à 4, caractérisée en ce que les parties

(11 ; 17, 18) en matériau souple sont fixées par collage sur les deux branches (1, 2).

7 - Pince à linge selon l'une quelconque des revendications 1 à 4, caractérisée en ce que les parties (11 ; 17, 18) en matériau souple sont fixées par emboîtement sur les deux branches (1, 2).

8 - Pince à linge selon l'une quelconque des revendications 1 à 7, caractérisée en ce que les parties (11 ; 17, 18) en matériau souple, ainsi que les parties formant mâchoires (6, 7) des deux branches (1, 2), présentent un élargissement, par rapport au restant des branches (1, 2) de la pince à linge.

FIG 1

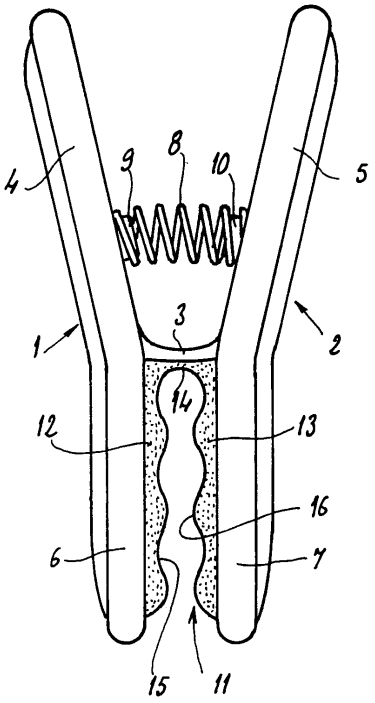


FIG 2

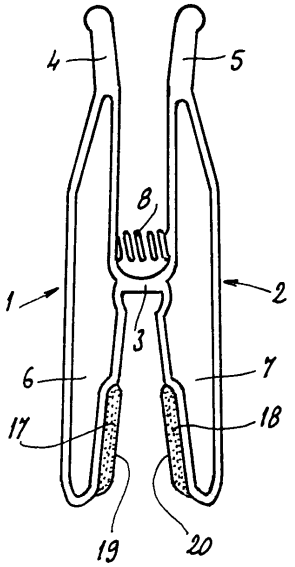
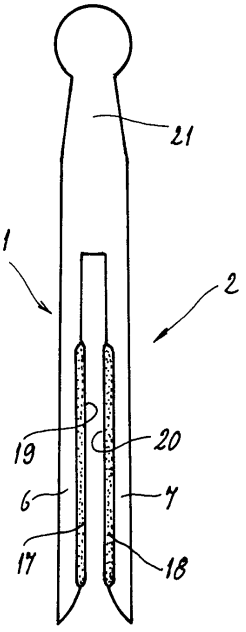


FIG 3



INTERNATIONAL SEARCH REPORT

International Application No
PCT/FR 99/02607

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 D06F55/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 D06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	FR 2 777 917 A (BARRE BERTRAND) 29 October 1999 (1999-10-29) the whole document	1-8
X	FR 2 555 620 A (JOUVE JEAN LOUIS) 31 May 1985 (1985-05-31) page 1, line 17 - line 26; claims; figures	1-3,5
X A	US 3 780 402 A (TAKABAYASHI T) 25 December 1973 (1973-12-25) column 3, line 35 -column 4, line 3; figure 1	1,3 5
X	DE 528 259 C (FROST FELIX) 11 June 1931 (1931-06-11) the whole document	1,4,7

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
20 April 2000	03/05/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Debard, M

2

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

International Application No
PCT/FR 99/02607

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 209 697 A (KISLINGBURY) 30 July 1940 (1940-07-30) page 1, column 2, line 12 - line 18; figures	1,3,7
X	US 4 722 120 A (LU JAMES) 2 February 1988 (1988-02-02) figure 3	1,7
X	FR 1 325 394 A (SEDIKEN KAGAKU KOGYO CO) 29 July 1963 (1963-07-29) claims; figures	1,3
X	US 5 855 046 A (BEAN CLIFFORD LESLIE ET AL) 5 January 1999 (1999-01-05) abstract	1,2

2

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/FR 99/02607

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2777917 A	29-10-1999	NONE	
FR 2555620 A	31-05-1985	NONE	
US 3780402 A	25-12-1973	CH 555983 A FR 2194247 A GB 1392216 A	15-11-1974 22-02-1974 30-04-1975
DE 528259 C		NONE	
US 2209697 A	30-07-1940	NONE	
US 4722120 A	02-02-1988	NONE	
FR 1325394 A	29-07-1963	DE 1585924 A GB 1012730 A NL 279708 A US 3131449 A	31-07-1969 05-05-1964
US 5855046 A	05-01-1999	GB 2312238 A	22-10-1997

RAPPORT DE RECHERCHE INTERNATIONALE

Demande internationale No
PCT/FR 99/02607

A. CLASSEMENT DE L'OBJET DE LA DEMANDE
CIB 7 D06F55/00

Selon la classification internationale des brevets (CIB) ou à la fois selon la classification nationale et la CIB

B. DOMAINES SUR LESQUELS LA RECHERCHE A PORTE

Documentation minimale consultée (système de classification suivi des symboles de classement)
CIB 7 D06F

Documentation consultée autre que la documentation minimale dans la mesure où ces documents relèvent des domaines sur lesquels a porté la recherche

Base de données électronique consultée au cours de la recherche internationale (nom de la base de données, et si réalisable, termes de recherche utilisés)

C. DOCUMENTS CONSIDERES COMME PERTINENTS

Catégorie °	Identification des documents cités, avec, le cas échéant, l'indication des passages pertinents	no. des revendications visées
E	FR 2 777 917 A (BARRE BERTRAND) 29 octobre 1999 (1999-10-29) le document en entier	1-8
X	FR 2 555 620 A (JOUVE JEAN LOUIS) 31 mai 1985 (1985-05-31) page 1, ligne 17 - ligne 26; revendications; figures	1-3,5
X A	US 3 780 402 A (TAKABAYASHI T) 25 décembre 1973 (1973-12-25) colonne 3, ligne 35 -colonne 4, ligne 3; figure 1	1,3 5
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-/--

[X] Voir la suite du cadre C pour la fin de la liste des documents

[X] Les documents de familles de brevets sont indiqués en annexe

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Formulaire PCT/ISA/210 (deuxième feuille) (juillet 1992)

RAPPORT DE RECHERCHE INTERNATIONALE

Demande internationale No
PCT/FR 99/02607

C.(suite) DOCUMENTS CONSIDERES COMME PERTINENTS

Catégorie °	Identification des documents cités, avec,le cas échéant, l'indicationdes passages pertinents	no. des revendications visées
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Demande internationale No
PCT/FR 99/02607

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E.2 FR 2 555 620 A1

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(30) Priorité :

(43) Date de la mise à disposition du public de la demande : BOPI « Brevets » n° 22 du 31 mai 1985.

(60) Références à d'autres documents nationaux apparentés :

(71) Demandeur(s) : *JOUVE Jean-Louis.* — FR.

(72) Inventeur(s) : Jean-Louis Jouve.

(73) Titulaire(s) :

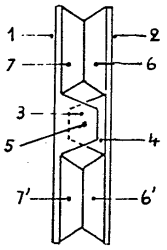
(74) Mandataire(s) :

(54) Pince à linge symétrique.

(57) L'invention concerne un dispositif de pince à linge à écartement et pincement similaires des deux côtés qui facilitent la manipulation et évite toute empreinte sur le linge après séchage.

Il est constitué de deux lattes symétriques 1-2 pourvues de paliers 3 et 4 maintenues dans leur centre 5. Les lattes possèdent quatre tampons souples 7-7′ et 6-6′.

Le dispositif, selon l'invention, est particulièrement destiné à maintenir le linge pour le séchage ou autre.



FR 2 555 620 - A1

Vente des fascicules à l'IMPRIMERIE NATIONALE, 27, rue de la Convention — 75732 PARIS CEDEX 15

La présente invention concerne un dispositif d'épingle à linge à écartement et pincement similaire des deux côtés qui évite toute empreinte d'épingle sur le linge après séchage.

Les pinces à linge traditionnelles connues n'ont qu'une extrémité à pincement dur, qu'elles soient en bois ou en toute autre matière. Elles sont équipées d'un fort ressort en acier qui a tendance à laisser une marque sur le linge ou fiare prendre la pince à linge dans le mauvais sens.

Le dispositif selon l'invention supprime ces inconvénients et permet à l'usager une plus grande facilité de manipulation. Il est composé de deux lattes similaires articulées dans leur centre munies à chaque extrémité de tampons mousse agissant comme ressorts.

Les dessins annexés donnent, à titre d'exemple non limitatif, une représentation de forme de l'objet de l'invention. La figure 1 représente le dispositif dans son ensemble selon l'invention. La figure 2 représente une variante de ce dispositif. La figure 3 représente un exemple de manipulation à partir d'une des extrémités du dispositif de pince à linge.

Le dispositif représenté sur la figure 1 comporte deux lattes symétriques (1)-(2) pourvues dans leur milieu de paliers de différentes formes (3)-(4) maintenues entre elles par un axe ou clip (5). Les deux extrémités des lattes (1)-(2) sont pourvues de tampons caoutchouc mousse (pouvant être remplacé par toute matière souple), faisant office de ressort - soit d'écartement et de pincement - (6-6') - (7-7').

La figure 2 représente une variante de forme pouvant être fabriquée d'une seule pièce (1)-(1') ; la latte souple (2) fait office d'articulation possible dans les deux sens grâce aux tampons (3-3') - (4-4'). La forme de ces tampons (3-3') - (4-4') peut varier ; il en est de même pour l'orifice. (5).

La figure 3 représente la pince en position de travail : la pression exercée par les doigts sur l'une des extrémités des lattes (1)-(2) entraîne l'écartement des tampons caoutchoutés (3)-(4) ou (5)-(6) selon l'extrémité saisie.

Les formes, dimensions et disposition des différents éléments pourront varier proportionnellement ainsi que les matières utilisées pour leur fabrication sans chager pour cela la conception générale de l'invention qui vient d'être décrite.

REVENDICATIONS

1 - Dispositif de pince à linge à écartement et pincement similaire des deux côtés de la pince, se caractérisant par la combinaison de deux lattes symétriques (1) et (2) pourvues dans leur milieu de paliers (3) et (4) reliées dans leur centre par un axe mobile formant l'articulation.

2 - Dispositif selon la revendication 1 caractérisé par la présence de quatre tampons en caoutchouc mousse, chacun des tampons étant fixé à l'une des extrémités des lattes pour former ressort en cas de pression (7-7') et (6-6').

3 - Dispositif selon la revendication 1 caractérisé par deux lattes (1) et (1'), une articulation (2), quatre caoutchoucs (3-3') et (4-4') et un orifice (5) pouvant être réalisé en une seule opération de moulage par injection.

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FIG 1

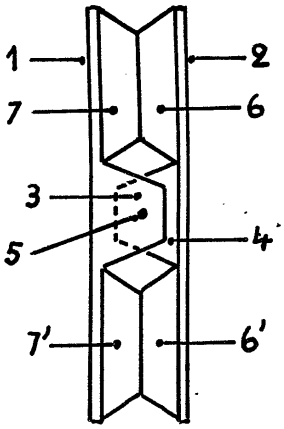


FIG 2

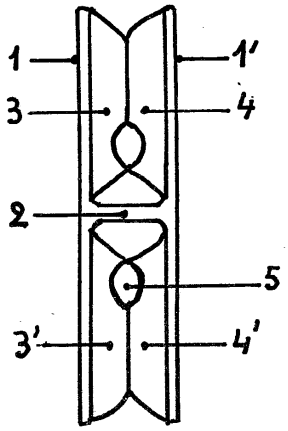
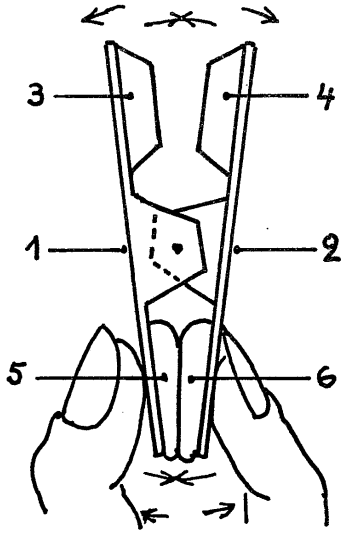


FIG 3



E.3 The Better Clothespin

Original can be found on: http://web.archive.org/web/20100119080606/http://www.americanheritage.com/articles/magazine/it/2006/2/2006_2_38.shtml

Why do inventors keep trying to improve a technology that is not only supremely simple but – for most of us – obsolete?

By Anita Lahey

Figure E.1: Some of today's newest laundry fasteners – and the classic wooden ones they've never yet supplanted. (Bob Rock)

Some of today's newest laundry fasteners – and the classic wooden ones they've never yet supplanted. (Bob Rock)

In 1998 The Smithsonian Institution's National Museum of American History mounted an exhibition titled ''American Clothespins," which consisted in part of displays of patent models of clothespins from as long ago as the 1850s. People came in droves. Those old wooden pegs inspired a huge outpouring of nostalgia. Then one day Barbara Janssen, the curator behind the exhibition, was walking through the museum and saw a boy turn to his father and ask, ''What's a clothespin, Dad?"

It's no wonder the child had never seen one before. Nearly 60 percent of American homes are now equipped with automatic clothes dryers. It's in the shadow of the dryer that quaint old clothespins and clothespin doll kits turn up on auction at eBay. The device has become so superfluous that Janssen herself, the leading expert on its evolution, has no use for it beyond its appeal as a collector's item. She once purchased a pack with playful

flowershaped heads at Target, but not to hang garments with. When asked if she has a clothesline, she replies, ''Of course not. I use a dryer."

Yet right now designers and inventors are working to improve the ancient household tool, and some of them are seeking patents for its latest incarnations. The clothespin, low-tech and old-fashioned though it may be, continues to capture the imagination and attention of hopeful innovators.

The earliest American patent for a clothespin, issued in March 1832, described a bent strip of hickory held together with a wooden screw. It was impractical. Rain or even dampness would cause the screw to swell, rendering the pin inoperable. It took 21 more years for an improvement to emerge that would be deemed worthy of manufacture (if briefly): the ''spring-clamp for clotheslines," invented by David M. Smith of Springfield, Vermont, in 1853, and made of two wooden ''legs" hinged together by a metal spring.

In his patent letters, Smith explained his clamp with a certain stiff eloquence: ''By pushing the two superior [upper] legs together the inferior [lower] ones are opened apart so that the instrument can be safely placed on the article of clothing hanging on the line. This done, the pressure of the fingers is to be removed so as to permit the reaction of the spring C to throw the inferior legs together, and cause them to simply grasp the piece of clothing and the line between them." The clamp's benefits: ''This instrument unlike the common wooden clothes pin in common use does not strain the clothes or injure them when it is used." Furthermore, he triumphantly concluded, ''it cannot be detached from the clothes by the wind as is the case with the common pin and which is a serious evil to washerwomen."

This was the beginning of the end of the uncontested reign of the straight wooden clothespin, a cylindrical strip of wood with a slit up the middle. People had either carved those themselves or purchased them from traveling peddlers who had crafted them by hand. (Frequently these clothespins were given decorative knobs that served well as heads when children turned them into tiny dolls.) Smith's invention, the earliest incarnation of the clothespin in most common use today, was to be tweaked and modified endlessly: 146 new patents were granted in the mid-nineteenth century alone, most modifying the shape or material of the spring or hinge in order to either improve performance or simplify manufacture.

It's a low-tech design competition that continues, though at a calmer pace, more than a century and a half later. Nine clothespin patents have been issued in the United States since 1981, for odd-shaped clamps and clips designed by people from places as far-flung as North Yorkshire, England; Tiachung City, Taiwan; Castelficardo, Italy; and Victoria, Australia. They seek to avoid drawbacks of the standard Smith-style clothespin: a tendency to rust, to fail in high winds, to twist apart, to dent fragile fabrics, and to jump unpredictably off the line. Some of them resemble pliers, or boast

formidable alligator-style jaws. The Yorkshire model, a plastic variation on the old-fashioned slit pin, is built with ribs that rise between increasingly broad gaps, to accommodate the varying thicknesses of garments and lines. The Taiwanese inventor of a reinforced, U-shaped clamp claims it will hold clothes firmly ''in a windy or vibrating situation."

Few of these have made it past their patent papers and into production. But the most recent new ''clothes-peg" (the common term for clothespin in Europe), a dual-plastic model that comes in pretty pastel colors, was patented on January 18, 2005. It is touted by its creator, the Zebra Company of Lyon, France, as the first clothespin made to ''take care" of clothing, treating it with kindness and respect. It's now being sold at WalMart, Target, and Bed Bath & Beyond and in Europe and Canada. Xavier Gibert, one of three partners at Zebra, says his product's pleasing appearance and soft texture make it ''a little less boring to hang out clothes." Another, a teardrop-shaped radical departure from the standard, molded from a single piece of pliable plastic and called the Clip 'n Stay, was named one of the top 10 designs of 1999 by Time magazine and has entered the collection of the Museum of Modern Art in New York City. And some 66 million''Hurricane Grip" pins are made each year by Technical Moulded Systems Limited in Staffordshire, England. They were created by Ivor Langford in the late 1990s, because metal springs often rust in rainy England and because 300 Britons a year are hospitalized after being struck by flying pegs.

In 2005 Oliver Mccarthy, a student at the School of Engineering and Design at Brunel University in London, England, earned a small dose of buzz as the inventor of a ''weather-predicting" clothespin, which uses electrical signals to forecast inclement weather and locks itself shut and becomes unusable if it feels a rain shower coming on. ''I wanted to take a fresh look at something that we all use regularly," McCarthy says. ''So often I'd hang washing out, only to take it in again five minutes later, absolutely soaked."

McCarthy's ''fresh look" explanation is telling. The clothespin, its many incarnations notwithstanding, has remained till recently so plain, so simple, and so little changed that it continues to attract designers by its very ordinariness. It is a prime target for face-lifts in a world where even simple functional tools are increasingly expected not just to work but to delight us as well.

''The world is more marketing aware," says Paul Turnock, the director of industrial design and product design at Brunel. ''All products, however humble, are subject to lifestyle scrutiny now, and everything requires added value to sell. This can be functional as well as aesthetic as well as better to use."

Style may be new in clothespins, but even functionality isn't that old. Pioneer women in North America and Europeans as late as the mid-nineteenth

century routinely laid clothing over bushes and hedgerows to dry. But drying laundry in the bushes could be less than pleasant. Never mind the leaf bits and other debris that might cling to the clean fabric. In one incident recounted in a Canadian history magazine, a young woman was cornered by a rattlesnake while laying her laundry on bushes. Her mother found her ''pale, motionless… . The sweat rolled down her brow, and her hands… clenched convulsively."

At some point, in what may have been an innovation brought home by fishermen who had hung their washing in rigging while out at sea, people began to put up ropes, often propped up by wooden stakes, to hang wet clothes from. Shortly thereafter they began to fashion wooden clips, and the peddlers of the day saw their market opportunity. Smith's clothespin and the manufacturing process that came with it sprang up precisely when a host of household tools and other objects were shifting from being handmade in small quantities to being manufactured in bulk. Plainfield, Vermont, became home to the National Clothespin Factory; Richwood, Virginia, according to a speech made by Sen. Robert Byrd in 2004, once boasted the world's largest clothespin operation. But not until after World War II did the spring clothespin dominate the straight wooden one.

By the late 1950s the Penley Corporation, founded in 1923 by three brothers in the logging business, was turning out 120 spring clothespins a minute. Richard Penley, the grandson of one of the company's founders and now its president, says the clothespin has always been surprisingly difficult to make. ''The disadvantage of working with wood is that you can cut a hundred boards of a particular log and every one of them has a different grain structure. When you cut it into small pieces and dry it, you have a great deal of variation from one piece to the next."

By 1970 Penley was one of just four companies still making clothespins in the United States; the others had either closed or begun importing. In 2001 Penley, too, shut down its clothespin operation and turned to Chinese suppliers. That left the National Clothespin Company in Montpelier, Vermont, the only manufacturer in the country; it gave up the following year. Wooden clothespins are now assembled exclusively in China. Rising manufacturing and labor costs, and dryers, are not the whole story. ''Disposable diapers probably did as much damage to the industry as anything else," Penley says. ''Prior to the invention of a diaper you could throw away, families were washing diapers all the time."

The clothespin has not just disappeared from North American factories. It has also quite literally begun to be driven from people's backyards. Though there is some movement to promote line drying as environmentally friendly, an opposing trend exists. According to the pro-clothesline Web site of Project Laundry List (www.laundrylist.org), operated by Alexander Lee of

New Hampshire, nearly all the 35,000 homeowners' associations in California prohibit the use of clotheslines, which they consider unsightly. The site maintains a list of clothesline-banning communities across the United States. On his Web site, Lee urges the ''victims" of such ''lunacy" to rise up against prohibition. ''My point is to educate people about how much energy gets used by electric clothes dryers. Plus, your clothes will last longer if you avoid dryers altogether."

Meanwhile, the man who six years ago designed the first clothespin to radically deviate from the three-piece Smith model – the pin that was hailed by Time and embraced by MOMA – uses his clip all the time, but not to dry laundry. ''I think it's outlawed in my hometown," says Lou Henry, of line drying in Westchester County, New York. ''I use it to hold a bag of potato chips closed."

Henry works for A2, Inc. (formerly Ancona 2), in Manhattan, where he created the Clip 'n Stay clothespin in 1999 for the firm's client Ekco Housewares Co., an Illinois company that had just entered the laundry industry. Henry and his colleagues persuaded their client that a snazzy new clothespin would lend its move into this new market some real punch.'We found that clothespins were the largest volume of laundry products sold by unit," Henry says. They also found that the main differentiations between clothespin brands were whether they came in packs of 12 or 24 or 50 and whether they were made of wood or plastic. There was room for a little creativity.

''My first goal was to make something that was nothing like any clothespin out there. I wanted to make it look cooler, make it function better, and make it cheaper." What he came up with, inspired in part by a previous effort to redesign salad tongs, was a teardrop-shaped clothespin made of a single piece of polypropylene that snapped together over a plastic hinge. A squeeze on the sides would cause the mouth at the base of the teardrop to open. It would close up again when the pressure was relaxed. It took a year of trial and error to find a plastic mixture that could easily be opened by an elderly woman with arthritis, for example, while retaining a firm grip. The final product was given a translucent look and was dyed in decorator colors, such as soft blue, orange, and green.

The result was a clothespin that looked high-end but was easier to manufacture and thus cheaper to make than the three-piece standard. Henry calls it the ''better mousetrap" of his career. ''It's quite a feat when the design is so simple that it makes other designers pull their hair out that they didn't think of it first."

When the ones he's using on his chip bags wear out, however, Henry won't be able to replace them. His clothespin was on the market only briefly, until Ekco became part of a larger company that had little interest in its laundry division. ''It had just been released," says Henry. ''No one knew it was

around in this corporate shuffle."

Prior to Henry's breakthrough, the most significant change to the hinged, two-legged clothes-pin was not in form but in material. Before World War II every clothespin in the United States was made of wood, usually a hardwood such as birch, beech, or poplar, abundantly available and resistant to splitting. Then one summer day in 1944, the story goes, Mario Maccaferri, an Italian immigrant and the inventor of the plastic reed for woodwinds, was sent out by his wife to purchase clothespins. Their local shopkeeper had none in stock; Maccaferri went to his reed plant and returned home that evening with six models of plastic clothespins. He went into production immediately with a clothespin that became such a hit retailers would take them away by the barrelful.

Nowadays plastic clothespins are available in endless variations, including a new one that has gone into widespread production, Zebra's ''sweet clip," made with both hard and soft plastics, using a dual-injection manufacturing process. The hard plastic is in the long handles, while two softer cushions sit where the pin grips the clothes. Zebra developed a dual-plastic toothbrush 15 years ago, applied the principle to clothespins in Europe in the late 1990s, obtained a worldwide patent, and captured 8 percent of the global clothespin market. The pin is sold in North America under the name Urbana.

''We love to target stupid products," says Xavier Gibert of Zebra. ''When you walk into a megastore, most of the time you see stupid products, boring products. You buy them because you need them. We target basic products to make them come alive, able to talk to people." And what does the Urbana clothespin say? Something along the lines of ''I'll be gentle."

''The key of this peg is not to be able to hold very heavy clothes," says Gibert. ''It's much more dedicated to sensitive clothes." Response to the pin has been enthusiastic. ''People were attracted by the design. They said,''Wow, we love the shape."

The Zebra clothespin may struggle to survive in North America, however. Kirk Sabo, vice president of marketing for its distributor, Varimpo Products, says its markup is dangerously high. ''When you can get 100 clothespins for $2.49," he asks, '' is there room for 10 for $4.99? Three years ago there weren't nonslip sexy clothes-pegs, and now there are, so something's happening, but how far will it go? The trick will be to drive down manufacturing costs so it can be more competitive.''

The pin has sold robustly enough to hang on to shelf space even at WalMart. And it has already inspired knockoffs. Sabo says at least six violations of the patent exist, and they are being challenged.

If you ask Penley, though, the man who grew up in the clothespin business, the old-fashioned wooden one is the design that will endure. ''People have

been inventing clothespins for a couple of hundred years," he says. ''But the basic spring clothespin works, and it's incredibly cheap. Nobody's been able to improve upon it to the point that it's a better product."

At least not yet.

Anita Lahey is a freelance writer in Ottawa, Ontario.