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An Introduction to Patent Translation

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According to the U.S. Code, Title 35, Section 154, a patent is defined as "a grant to the patentee…of the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States…for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application was filed."

A patent, therefore, confers only a *negative* right. The authority that grants the patent—which may be a national patent office or a supranational entity, such as the European Patent Office—undertakes to enforce the patentee's right to exclude others from practicing the invention, but the inventor's right to practice his or her own invention remains independent of the patent.

A patent is both a technical and a legal document: It is an agreement between an inventor and an authority defining the parties' reciprocal rights and obligations with regard to a particular new area of knowledge called an *invention*.

WHAT IS AN INVENTION?

In U.S. patent law, the subject matter of an invention, which may consist of a "process, machine, manufacture, or composition of matter, or any…improvements thereof," must meet three criteria. It must be all of the following:

- **Novel:** A patentable invention must not have been known or used by anyone in the United States or published or patented anywhere in the world before being invented by the applicant. It must not have been published or patented anywhere in the world or have been put in use or on sale in the United States more than one year prior to the application date. This criterion defines the "prior art" (*Stand der Technik*)—that is, the known state of technical development in the field of the invention.

- **Non-obvious:** The difference between the subject matter for which a patent is being sought and the prior art must be such that the subject matter would not have been obvious—at the time the invention was made—to a person having ordinary skill in that art (*durchschnittlicher Fachmann*).

- **Useful:** According to the Patent Cooperation Treaty (PCT), an international agreement designed to "simplify and render more economical the obtaining of protection for inventions where protection is sought in several countries," the requirements for usefulness are novelty (*Neuheit*), the demonstration of an inventive step (*erfinderische Tätigkeit*), and industrial applicability (*gewerbliche Anwendbarkeit*). Many German patents are now written to conform to the treaty's requirements.

INTERNAL ORGANIZATION OF A PATENT

The internal organization of any patent is quite predictable. Certain elements are mandatory, such as the specification, one or more claims, and the abstract. The sections that compose the specification may not always be explicitly identified in the text, but the conceptual sequence of the patent is almost always the same.

A published patent begins with a cover page issued by the authority that is responsible for granting the patent. This page provides all reference numbers, dates, names of patentees and inventors, and other administrative information. Each item is preceded by a number in parentheses, called an INID (internationally agreed numbers for the identification of data) code. This code allows the critical data in the patent to be extracted regardless of the language used on the cover page.

The patent proper, then, begins as follows.

Specification *(Beschreibung)*

The specification is a narrative description of the invention—in fact, it is referred to as the "description" in the PCT. It begins by giving the background of the invention (*Stand der Technik* or *Technisches Gebiet*); the first sentence of a German-language patent often begins "Die Erfindung betrifft…" (The invention concerns/relates to…). This section defines the prior art—that which is known *(bekannt)*—in relation to which the invention must represent some novelty or improvement. The PCT defines prior art as "everything made available to the public anywhere in the world by means of written disclosure" and requires that relevant documents, such as journal publications or other patent documents, be cited and summarized in this section. The shortcomings or disadvantages *(Nachteile)* of the prior art are often described here, setting the stage for the summary of the invention *(Darstellung der Erfindung),* which typically begins "Es ist Aufgabe der Erfindung . . ." or "Der Erfindung liegt die Aufgabe zugrunde . . ." (It is the object of the invention…). The summary states the disadvantages that the invention is intended to overcome *(vermeiden)* and the advantages that it offers.

The next paragraph, which often begins with a phrase such as "Diese Aufgabe wird erfindungsgemäß dadurch gelöst, daß…" (This object is achieved, according to the present invention, in that…), introduces the advantages of the invention. (In the European conception, a patent solves a problem, whereas in U.S. terminology, it achieves an object.) This section states the specific ways in which the invention achieves the stated object *(die gestellte [bzw. objektive] Aufgabe),* often referring to advantages *(Vorteile)* or advantageous or preferred embodiments *(vorteilhafte bzw. bevorzugte Ausbildungen).* In many patents, the wording of this section approximates that of the claims.

The summary of the drawings—often headed *Zeichnung*, as drawings are singular in German but plural in English—is introduced by a paragraph mentioning "ein Ausführungsbeispiel der Erfindung anhand von Zeichnungen" (an exemplary embodiment of the invention with reference to drawings) or some similar phrase. Each figure is described in terms of what it depicts, the direction of view, and its relationship to other figures.

The remainder of the specification consists of the description of preferred embodiments *(Beschreibung der Ausführungsbeispiele),* where the invention is described in detail. In this part of the specification, the inventor supplies the

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"disclosure" that is his or her part of the patent transaction. In other words, in return for receiving the rights conferred by a patent, the inventor *(Erfinder)* gives to the public, by way of the printed patent, a full written disclosure *(Offenbarung)* of the invention, which must be complete enough to teach *(lehren)* those skilled in the relevant art how to make and use the invention. The disclosure must also describe what the inventor believes is the best way to carry out *(durchführen)* the invention (see Amernick 1991).

In mechanical and electrical patents, the specification refers to detailed patent drawings in which each element or component is labeled with a reference character *(Bezugszeichen).* Chemical patents seldom have drawings, but they often include formulas and examples *(Beispiele)* that disclose the relevant method or composition of matter.

Patent translation is not for the faint of heart or the disorganized.

Claims *(Patentansprüche)*

The claims define the bargain between the authority and the inventor. Each claim delimits a "range of protection" *(Schutzbereich)*—that is, the particular area of technology within which the authority will enforce the inventor's right to prevent others from exploiting the invention. Claim writing is a subtle matter, and the phrasing of each claim is critical: If a claim is written too broadly, it may infringe on some prior art, and thus the invention will not be patentable; if it is written too narrowly, the protection can easily be circumvented. According to the PCT, "An appropriate claim is one which is not so broad that it goes beyond the invention nor yet so narrow as to deprive the applicant of a just reward for the disclosure of his invention." The translation of claims, therefore, demands particular attention and care.

In U.S. patents, the numbered list of claims is sometimes prefaced by a phrase such as "I claim…" or "What is claimed is…"; this phrase seldom appears in German patents. Even without the explicit preface, however, each claim is conceptually a single sentence that contains only one period at the end. This "single-sentence rule" is standard practice in both German and U.S. patents, although a recent article points out that while "one of the more unchallenged notions in U.S. patent practice is that a claim must be a single and complete sentence, no more and no less…,[T]here is…no mention made of a single sentence except for the policy statement contained in the [U.S. Patent and Trademark Office's] Manual of Patent Examining Procedure…which reflects the presumptions under which the PTO operates but which does not have the force of law" (McKeown 2003). Irrespective of the legal or procedural status of the single-sentence rule, the vast majority of German-language patent claims are indeed drafted as a single sentence, and the translator must respect that structure.

Although they are almost always drafted as a single sentence, claims usually have a two-part structure. The first part is the preamble *(Oberbegriff),* which designates the subject matter in terms of the prior art that is relevant to the invention. German claims begin with a noun *("Vorrichtung…")*, but it is common practice in U.S. patents to begin the main claim *(Hauptanspruch)* and any other independent claims (*unabhängige Ansprüche*) with an indefinite article ("An apparatus…") and to begin each dependent claim *(Unteranspruch)* with the definite article ("The apparatus as defined in [or simply "of"] Claim X…"). The second part is the characterizing clause or characterizing portion *(Kennzeichenteil),*

which very often begins "dadurch gekennzeichnet, daß," usually rendered as "characterized in that" or "wherein." This part describes the aspects of the invention that are novel and inventive *(erfinderisch)* and therefore should be protected.

Abstract *(Zusammenfassung)*

A brief summary of the invention appears on the cover page of a published patent or as part of an unpublished application. English-language translations of abstracts on PCT cover pages are, unfortunately, notoriously poor: The translators almost never have an opportunity to read (let alone translate) the entire application, and therefore the terminology is often inappropriate. A competent translator working on a complete patent should research and develop his or her own terminology without regard to such precedents.

Drawings *(Zeichnung)*

Chemical patents and patents in arts that are concerned exclusively with processes may not be accompanied by drawings. In all other cases, drawings are an integral component of the patent. No patent should ever be translated unless its drawings are supplied: They often resolve ambiguities and provide other vital information.

List of Reference Characters *(Bezugszeichenliste)*

A list of reference characters does not appear in every published patent or application. Certain attorneys prefer to call it the "parts list" or the "reference numeral list."

TRANSLATING PATENTS

Thematic Unity

Rule 13 of the PCT regulations states that "the application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept ('requirement of unity of invention')." For the translator, this means that each individual patent—like a sonnet or a short story—deals with only one topic; this restriction, in turn, limits the amount of subject-related research that must be done for each patent.

Terminology

Within that single topic, one of the translator's principal tasks is to understand and manage terminology. Most importantly, the target-language terminology must reflect the source-language terminology both consistently and uniquely. For example, if *Einrichtung, Vorrichtung, Gerät,* and *Einheit* all appear in the German text, and if those words are rendered in English as "mechanism," "apparatus," "device," and "unit," respectively, then that assignment of terminology must remain consistent within the patent—that is, *Vorrichtung* must always be translated as "apparatus," and "apparatus" must never be used to translate any other German term. The same logic applies to all other words and terms.

Much of the patent translator's time is spent setting up and maneuvering around these terminological barricades. This demands close attention and good

record keeping: Translation memory software and searchable databases are convenient, but even handwritten notes can be effective.

The terminology must also be *appropriate*. The original author of the patent worked very hard to define the subject matter in a way that was neither too broad nor too narrow. The translator must respect those intentions: For example, a *topfartige Auswölbung* must be called a "cuplike bulge" even if, in the drawings, it looks like a bump.

Translation Procedure

In many patents, the same material appears more than once within the specification; often, there are parallels between certain portions of the specification and the claims. The translator can take advantage of these echoes, thereby saving time and enhancing terminological consistency, by adopting a standard procedure:

Considered across the spectrum of all possible attorneys with whom the translator may work, the most likely answer to a question about specific English-language usage in patents is "It depends."

- First translate the entire specification, referring to the drawings in order to resolve terminological mysteries. One way to ensure accuracy is to reread each paragraph on screen as it is completed, then print out the entire specification and check it once more against the original.

- The very first paragraph of the specification, which typically begins "Die Erfindung betrifft…," is often identical to the preamble of the first claim. Cutting and pasting that section will ensure terminological consistency and save time.

- The section that begins with the statement of the patent's object (e.g., "Der Erfindung liegt die Aufgabe zugrunde…") often contains a number of paragraphs that each describe a feature that is advantageous *(vorteilhaft).* The first such paragraph is often similar to the characterizing portion (following "dadurch gekennzeichnet, daß…") of the first claim, and each subsequent paragraph echoes another individual claim. Cutting and pasting this entire section and then making any necessary adjustments will ensure that the terminology used in the claims is consistent with that used in the specification. Once again, it is advisable to print out the claims and double-check them for consistency and accuracy (especially with regard to reference numbers) against the original.

- The abstract often mirrors the first claim (with punctuation modified to enhance readability, as the single-sentence rule applies only to claims) and can often be brought over with only minor modifications.

- Once again, translation memory software can automate the process of finding and inserting these textual parallels.

It is rare for any single patent text to offer all of these duplications (and therefore all of these opportunities to save time and effort). In some patents, the correlation between the specification and the claims does not extend to specific phrasing, and the terminology defined in the specification is helpful in only a

general sense. In every patent, *every word* needs to be carefully considered and checked against the original.

Oddities

The patent dialect of English has many peculiarities: Unusual "there-" compounds (not only "thereabove" and "thereof" but also "therebetween" and "therethrough") and adverbs ("floatingly," "nondisplaceably," "oscillatingly," and even "parallelepipedally") are perhaps the most striking, but here are a few more:

- The definite article is omitted before words or phrases followed by a reference character that is not in parentheses—for example, "connected to widget 14" rather than "connected to the widget 14." Reference characters always appear in parentheses in the claims and in the abstract, where the definite article is used according to normal English practice.

- Except in certain circumstances in chemical patents, there are legal reasons for avoiding the phrase "consists of" in English-language patents. Therefore, the German *besteht aus* should always be rendered as "comprises"—please, never "comprised of"!—or "encompasses." Some attorneys also shy away from "by means of," preferring alternatives such as "by way of."

- The apparently innocuous German conjunction *mit* is seldom rendered as "with." In a patent context, the German *Torte mit Schlagsahne* would be translated as a "cake having whipped cream." As always, there are different preferences: Some clients ask that *mit* be translated as "comprising" when it appears in the claims, whereas others stipulate that "compris-" forms should appear only in independent claims.

- Considered across the spectrum of all possible attorneys with whom the translator may work, the most likely answer to a question about specific English-language usage in patents is "It depends."

WHY TRANSLATE PATENTS?

Patent translation is not for the faint of heart or the disorganized. It demands a meticulous and rigorous approach to subject matter that may be complex and abstruse. It also imposes serious responsibilities on the translator: A mistranslation that causes "the scope of any patent to exceed the scope of the international application in its original language" may end up invalidating the patent. That loss of intellectual property protection can disrupt production plans and, ultimately, lead to the loss of both income and jobs. Even the rectification of obvious errors involves official correspondence and therefore time and cost. The translator assumes a burden of trust, as most patent applications, reports, and correspondence must remain confidential.

Among the many rewards of this specialty, however, is the knowledge that with each patent, the translator is helping to advance the frontiers of innovation. Because a U.S. patent represents a valuable piece of property that is worth acquiring, patent translators can establish a relatively generous fee structure—

provided they have demonstrated an ability to consistently and reliably produce American English patent texts that are both accurate and idiomatic.

One final benefit of working in patent translation is a small measure of job security: The subtleties and peculiarities of patent language in both German and English are such that patent translation is likely to resist automation for at least a few more years.

REFERENCES AND FURTHER READING

Quotations that are not otherwise attributed are taken from the following documents, which are downloadable in PDF format from the Web site of the World Intellectual Property Organization.

- Patent Cooperation Treaty (as of April 1, 2002), http://www.wipo.int/pct/en/texts/pdf/pct.pdf
- Regulations Under the Patent Cooperation Treaty (as of April 1, 2007), http://www.wipo.int/pct/en/texts/pdf/pct_regs.pdf
- PCT International Search and Preliminary Examination Guidelines (as of March 25, 2004), http://www.wipo.int/pct/en/texts/pdf/gdlinesparts.pdf

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About Patents

Amernick, Burton A. 1991. *Patent Law for the Nonlawyer: A Guide for the Engineer, Technologist, and Manager.* 2nd ed. New York: Van Nostrand Reinhold.

Arnold, Tom, and Frank S. Vaden III. 1971. *Invention Protection for Practicing Engineers.* New York: Barnes & Noble.

Elias, Stephen. 1997. *Patent, Copyright and Trademark.* 2nd ed. Berkeley, CA: Nolo Press.

Gordon, Thomas T., and Arthur S. Cookfair. 2000. *Patent Fundamentals for Scientists and Engineers.* 2nd ed. Boca Raton, FL: CRC Press.

Kilpatrick Stockton LLP. 2006. *Intellectual Property Desk Reference: Patents, Trademarks, Copyrights, and Trade Secrets.* Atlanta, GA: Kilpatrick Stockton.

Maynard, John T., and Howard M. Peters. 1991. *Understanding Chemical Patents: A Guide for the Inventor.* 2nd ed. Washington, DC: American Chemical Society.

McKeown, James F. 2003. Claim Drafting Strategies Revisited—Is the "Single Sentence Rule" Too Inflexible? *Intellectual Property Today,* August, 11–12.

Morita, Yoriko, ed. 1996. *Patent Translation Handbook.* Washington, DC: American Translators Association, Japanese Language Division.

Norris, Kenneth. 1985. *The Inventor's Guide to Low-Cost Patenting.* New York: Macmillan.

Petroski, Henry. 1992. *The Evolution of Useful Things.* New York: Alfred A. Knopf.

Pressman, David. 2005. *Patent It Yourself.* 11th ed. Berkeley, CA: Nolo Press.

U.S. Department of Commerce, Patent and Trademark Office. 2005. General Information Concerning Patents. http://www.uspto.gov/web/offices/pac/doc/general/.

German–English Dictionaries

Klaften, B., A. Wittmann, and J. Klos. 1986. *Wörterbuch Patentfachsprache.* 5th ed. Munich: Wila.

Münch, Volker. 1992. *Patentbegriffe von A bis Z.* Weinheim: VCH.

von Uexküll, J.-D., and H. J. Reich. 1998. *Wörterbuch der Patentpraxis.* 5th ed. Köln: Carl Heymanns.

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