Literal Translation of Patents

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For seasoned translators, literal translations are often objects of scorn. The term brings to mind the awkward struggling of novices or the gobbledygook churned out by underpaid drudges in translation sweatshops. Many experienced translators are fond of saying that they translate meaning, not words. In most fields, the best translators are distinguished by their ability to make suitable word choices and to craft graceful sentences in the target language. They would shudder at the idea of slavishly reproducing the wording of the source text in a literal translation.

It is a bit of a shock, then, when a project manager first sends us a patent and tells us that he or she needs a literal translation. It may seem that we are being asked to take a step backward—that the request indicates a lack of trust in our capacity for comprehension or composition. We may even believe that the task is impossible, as we all know that a complex source text cannot be reproduced word for word while still retaining the original meaning.

A better understanding of what is meant by the term *literal* in the context of patent translation, however, makes clear that the task is not only possible but is reliably achieved hundreds of times each day by specialized translators around the world. Far from being a step backward, literal translation actually requires significantly greater expertise as a translator. What is more, the literal translation of patents is a skill that can be both enjoyable and financially rewarding.

Before delving into a nuts-and-bolts methodology for the literal translation of patents, it is important to understand the circumstances in which literal translations are needed and the ways in which such translations may be used.

WHY LITERAL TRANSLATION?

A patent is a long, precisely worded legal definition of an invention. As such, the meaning conveyed by the words is important, but so is the wording itself. In many cases, the decisions made by patent offices, courts, and even research departments hinge more on the way the definition is set forth than on the actual technology that is described in the patent. To grasp the importance of the actual wording, we need know how the translation will be used.

Understanding how literal translations are used is easier if we know something about how the patent system works. A patent is an agreement between a government and an individual or company. By granting the patent, the government is basically saying, "If you tell everyone how your idea works, we'll make sure that nobody uses it without your permission for 20 years." The government will issue a patent for just about anything that is useful, so long as the idea is **novel**—and by novel, the government means that it must not be publicly known anywhere in the world.

The first step toward getting a patent is to find out whether the idea is already known. If it is, you can stop wasting your time with something that cannot be patented, or you can steer the development of your invention so that it is different from what is out there already—which is to say, so that it is novel with respect to the **prior art**.

Researching prior art involves searching through patents, and if you come across foreign patents that describe something similar to your idea, you will need to have them translated. At this point, the translation should be completely faithful to the original. If one word is left out of a list—and if that word just happens to be the focus of the invention at hand—you will believe that your idea is novel, when, in fact, it is not. Similarly, if the translator chooses slightly different words than those used in the original patent, either through carelessness or, with the best intentions, to make the target text flow more smoothly, you may get the wrong idea about what the foreign patent actually covers.

For example, if the foreign document describes something as being "rectangular," but the translator, thinking only in general terms, translates this as "square," you might mistakenly believe that your long, thin rectangular invention is novel. Likewise, if the original says that "the cover can be displaced so as to close the opening," but the translator, basing his or her understanding on the drawings, translates this as "the cover slides over the opening," you might be given the false impression that a hinged cover would still be novel.

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Once you have satisfied yourself that your long, thin device with the hinged cover is novel, you can move forward to develop the invention and, once it is finished, draft a patent specification. If you have any doubts about the importance of the wording of the patent specification, consider that inventors—who know their inventions better than anyone else—do not trust even themselves to get it right. Instead, they pay thousands of dollars to have a patent attorney or agent choose the exact phrasing that will give them the maximum coverage while steering clear of the prior art.

After filing your well-drafted patent specification in your own country, you can take advantage of international conventions and treaties to file it in other countries as well. If the official language of the country in which you seek protection is different from the language in which the specification was drafted, it will need to be translated. There are two ways that a translated patent can be filed in another country: under the Paris Convention or under the Patent Cooperation Treaty (PCT).

Under the Paris Convention, it is sufficient for the translation to describe the same invention described in the original patent. There is no special need to stick to the original wording, and in many cases, the original wording will not do because each country has its own conventions and requirements for how a patent specification must be set forth. You may want to have this translation done by a highly experienced translator who is an expert in the patent law of the foreign country in which you are filing. It is more likely, however, that you will leave it up to a local attorney, who will farm out the translation and then rewrite it so that it is legally sound. In either case, translation for filing under the Paris Convention is one of the only types of patent translation that *does not* have to be literal.

Under the PCT, an inventor must first file what is known as an **international application**, which is published by the World Intellectual Property Organization

(WIPO) in Geneva. Later on, the patent can be filed in other countries, but the translation must be an exact translation of the international application as published by the WIPO. For example, the U.S. Patent and Trademark Office's *Manual of Patent Examining Procedure* states that "Amendments, even those considered to be minor or to not include new matter, may not be incorporated into the translation" (§1893.01[d]). If changes need to be made in order to respect local patent practice, these can be filed as separate amendments, but the translation that is filed must be literal. At the same time, because there is a good chance that no amendments will actually be filed and the translation will have to stand on its own during local prosecution and any court challenges, you will want the translation to sound good. In other words, you will want to find a translator who can stick close enough to the original that no one can say that it has been amended or modified while still crafting a document that reads well enough to convince examiners and juries of the merits of your invention.

In some countries, such as the United States and Japan, there is a less commonly used third option whereby a patent can be filed with the local patent office in a foreign language and a translation can be provided afterward. This type of filing actually falls under the Paris Convention, but, as with PCT applications, the translation must be literal, and any changes must be filed as separate amendments.

Now that your patent has been filed around the world, you might expect to sit back and start raking in the money, but it is rarely as easy as that. Often, the first letter that you will receive from the examiner at the government patent office will be a form letter explaining that your application is about to be rejected for lack of novelty. The examiner will then cite a number of publications in which ideas that are similar to yours are described. Some of these documents may be in foreign languages.

Fortunately, you have an attorney to argue against this. In making the claim that your invention is different from the ones cited by the examiner (for example, because the prior art is limited to square devices with sliding covers), your attorney may use the translations that were done when you were researching the prior art. The attorney might also request translations of other documents for which the examiner has only an English abstract or a machine translation. As these translations will be used to split hairs over the similarities or differences between related technical ideas, you can bet that the attorney will want literal translations.

If all goes well, you will receive your patent, but your intellectual property worries and your translation needs are not necessarily over. Your patent can be challenged at any time, and this is particularly likely to happen if you are involved in litigation over patent infringement. Your opponents may attack your patent's claim to novelty using previously undiscovered prior art, and some of this evidence may, once again, include foreign-language publications. The other party may even get its own translations of documents that you translated earlier and use these to argue that the prior art discloses not only square devices but *any* rectangular device. Your opponent may go on to argue that the disclosure afforded by a proper translation would cover all forms of displacement of the cover, whether sliding or swinging. In this case, the translations will be certified by the translators as being faithful to the original, and the same translators (or other translators)

may even be hired as expert witnesses to give their opinions as to why a certain turn of phrase is or is not an accurate rendering of the original text.

WHAT IS LITERAL TRANSLATION?

Now that we have identified the situations in which literal translations are required, we need to define what literal translations are and outline a methodology for preparing them.

In the field of patent translation, a literal translation is *an exact and accurate reproduction of the entire content of the source text without embellishment or modification.* The job of the patent translator, then, is similar to that of a court interpreter. Translators may not contribute their own knowledge or opinions but rather must limit themselves to reproducing precisely what is said in the original patent.

A literal translation in this context should not be confused with a **formal equivalence** translation, in which the translator reproduces both the words and the grammatical structures from the source text with as little modification as possible so as to recreate the form of the original. That is to say, we would not translate "Je m'appelle Martin et je suis traducteur," as "I call myself Martin and I am translator."

Far from providing the accuracy that we are striving for, formal equivalence often produces a misleading target text. In the example just given, saying "I call myself Martin" implies that Martin is not really my given name but rather a name that I have chosen to use, whereas the source text implies no such thing. And when we read "I am translator," without the indefinite article, we get the impression that the author was careless or uneducated, whereas this is not the impression given by the French original.

On the other end of the spectrum are **functional equivalence** translations. Functional equivalence means translating the meaning rather than the words, and it is fine for many types of translation, but in patent translation, it leaves us open to unintended consequences of the sort that result from translating "rectangular" as "square." Another problem with functional equivalence is that it does not lend itself to formal methodology, so it is difficult to be sure whether we are getting it right. Finally, when a "literal" translation is what is requested by clients or demanded by the law, functional equivalence will not fit the bill.

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HOW TO PREPARE A LITERAL TRANSLATION

The basic rules for literal translation of patents are as follows:

- Reproduce the meaning.
- Reproduce the register.
- Respect sentence breaks and carriage returns.
- Be consistent in the use of vocabulary and phrasing.
- Maintain a one-to-one correspondence between source and target.
- Provide appropriate annotation.

Reproduce the Meaning

Making sure that we convey the original meaning in the target text may seem obvious, but when we are struggling with hundred-word sentences and juggling

legalese, this rule can sometimes be forgotten. Of course, it is not possible to know whether we are reproducing the meaning if we do not understand the source text. That is why patent translators often limit the work they do to a few technical fields in which they have real expertise, especially considering that patents present additional challenges: (1) The sentences are generally long and complex; (2) the technology described is sometimes obscure; and (3) the technical writing skills of attorneys can be even worse than those of ordinary engineers.

Reproduce the Register

Again, like a court interpreter, the literal translator should be invisible, which means reproducing the style and tone of the source author as closely as possible. For patent translators, this usually means recreating the formal, legalistic, and somewhat archaic language favored by patent attorneys. Of course, in order to reproduce the register of a patent attorney, you must know what a patent attorney sounds like in the target language. The best way to educate yourself in this regard is to read plenty of patents in the target language.

Another aspect of reproducing the register is creating a reading experience in the target language that is no more difficult than it is in the source language. An overly direct translation of a poorly drafted specification can produce a target text that reads like the ramblings of a madman. Remember that if the author does not sound insane or illiterate in the source, he or she should not do so in the target.

Respect Sentence Breaks and Carriage Returns

This is any easy one. As literal patent translators, decisions about where to break sentences and paragraphs have been made for us by the source author. Patents written in any language will include sentences that are much longer and more complex than those used in ordinary technical or legal documents, so there is no need worry about what grammar teachers would call run-on sentences. No one who is used to reading patents will be shocked.

On the other hand, translators are generally given a free hand when it comes to punctuation other than periods, and, if a sentence becomes too long for easy reading, it is acceptable to use semicolons to chop it up into manageable chunks.

Be Consistent in the Use of Vocabulary and Phrasing

Beyond what you would expect in any technical translation, there is a particular need for consistency when translating patents. Remembering that patents constitute long, elaborate legal definitions, consistent terminology should be understood as the glue that binds the various parts of the definition together. For example, if Claim 4 mentions a shaft, but the embodiment that describes this same technology refers to it as an axle, examiners and unfriendly attorneys will be able to make the case that Claim 4 is not supported by the description of the embodiments. It does not matter that anyone with common sense can see that the two terms refer to the same thing: Wording is king in the world of patents.

Maintain One-to-One Correspondence between Source and Target

This is the hard part. The particular challenge of patent translation is to reproduce all of the elements of the source text—all of the terms and phrases—without

producing a stilted, mechanical, disjointed, or unnatural target text. This difficult task can be compared to that of a scrabble player or a mosaic artist, who can use only the pieces he or she is given. The skill lies in the ordering and arranging of these pieces to create a natural effect. There are two techniques that can be applied: **conservation of lexemes** and **equivalent phrasing**.

Earlier, I said that we would not translate "Je m'appelle Martin et je suis traducteur" as "I call myself Martin and I am translator." The correct translation would clearly be, "My name is Martin and I am a translator." Converting "Je m'appelle Martin" to "My name is Martin" is an example of equivalent phrasing, and producing "I am a translator" from "je suis traducteur" is conservation of lexemes.

Conservation of Lexemes

The conservation of lexemes technique requires that we differentiate between **lexemes** and **function words**. We must be sure to faithfully reproduce each of the lexemes and not add new lexemes, but we are free to change function words and phonemes (prefixes, suffixes, etc.) in the way that best suits the constraints of the target language.

Lexemes are the basic units in "content words" and have independent meaning. Though our definition is somewhat different from that used by pure linguists, for our purposes, lexemes include nouns, verbs, adjectives, adverbs, and numerals. Some examples of lexemes are *dog*, *gun*, *multitasking*, *run*, *implement*, *disassociate*, *fast*, *slowly*, *150*, and *five*.

Function words constitute the grammatical scaffolding on which lexemes are mounted. Function words include articles, pronouns, prepositions, postpositions, conjunctions, auxiliary verbs, interjections, particles, and expletives. Examples of function words are *him*, *she*, *it*, *they*, *that*, *of*, *on*, *under*, *before*, *thereafter*, *thereby*, *and*, *but*, *for*, *so*, *unless*, *because*, *is*, *may*, *can*, *should*, *will*, *wow*, *oh*, *to*, *even*, and *there*.

These are all English-language examples, but a similar differentiation can be made in all languages. Depending on the language, there may be additional clues for telling the two apart. For example, in Chinese, lexemes always have tones, whereas function words are often toneless. In Japanese, most lexemes can be written with Chinese characters, but many function words can only be written in phonetic script.

There are cases in which it is not easy to determine whether a particular word is a function word or a lexeme. The rule of thumb for our purposes is this: When in doubt, call it a lexeme.

In the following sentence, the lexemes are underlined:

The invention relates generally to the field of writing instruments.

Some of the underlined words are actually lexeme derivatives. That is to say, the lexeme in *relates* is *relate,* the lexeme in *generally* is *general,* the lexeme in *writing* is *write,* and the lexeme in *instruments* is *instrument.* In a literal translation, we should be satisfied with conserving the core lexeme that carries the meaning. The form (tense, number, and part of speech) can be changed as necessary to produce a target sentence that flows better and is easier to understand.

Remember that if the author does not sound insane or illiterate in the source, he or she should not do so in the target.

Consider the following sentence, which is labeled with *F* for function words and *L* for lexemes.

F	L	L	L	L (jump)	L	F	L	L
The	quick	brown	fox	jumped	over	the	lazy	dog.

Without substantially changing the meaning and without adding or deleting a single lexeme, we can write the same sentence in several different ways. Here are some examples, with the lexemes underlined:

- Over the lazy dog, jumped the quick brown fox.
- The lazy dog was jumped over by the quick brown fox.
- The fox, which was quick and brown, jumped over the dog, which was lazy.
- The fox did jump, and did so over the dog, the fox being both quick and brown, while the dog was lazy.

Note that, for grammatical clarity, the same lexeme can be reused in several places within the sentence, so long as doing so does not alter the meaning.

In this particular case, both the register and ease of understanding for the reader change as we move further away from the original structure. In an actual translation, how closely we reproduce the original structure will depend largely on how grammatically close the source and target languages are. Our choices should be governed by the constraints of respecting the first four rules of literal translation listed earlier.

The following are examples of the conservation of lexemes in action. In the tables, the source sentence is followed by a direct (formal equivalence) translation. If you do not know the source language, ignore the source and treat the direct translation as if it were the source. Next, a better rendering, which has been produced by conserving lexemes, is shown. Finally, an example of a nonliteral (unacceptable) translation is given.

In this first example, the word order and prepositions have been changed to produce a more natural English reading:

Source	La présente invention est relative à un système de verrouillage des portières d'un véhicule automobile.
Formal equivalence	The present invention relates to a system of locking of the doors of a motor vehicle.
Conservation of lexemes	The present invention relates to a door-locking system for a motor vehicle.
Nonliteral	The present invention relates to a system whereby the doors of a motor vehicle can be locked.

The nonliteral translation is unacceptable because even though no lexemes have been added or omitted, an idea of agency, or cause and effect, has been introduced. In other words, it does not accurately reproduce the meaning.

In the following example, the adverbial phrase has been moved to keep it close to the verb it modifies:

Source	窒素源としては、硫酸アンモニウム、塩化アンモニウム、尿素等、 或いはこれらの混合物を使用することができる。
Formal equivalence	For the nitrogen source, ammonium sulfate, ammonium chloride, urea and the like, or a mixture thereof, can be used.
Conservation of lexemes	Ammonium sulfate, ammonium chloride, urea and the like, or a mixture thereof, can be used as the nitrogen source.
Nonliteral	The nitrogen source can be chosen from ammonium sulfate, ammonium chloride, urea and the like, or a mixture thereof.

The nonliteral translation is unacceptable because it adds the lexeme "choose."

In this example, the lexemes are conserved but used in different parts of speech:

Source	Dieses Mittel wurde auf eine belichtete und ausgewaschene Photopolymer-Hochdruckplatte gesprüht…
Formal equivalence	This product was sprayed on a light-exposed and rinsed-off photopolymer letterpress printing plate…
Conservation of lexemes	This product was sprayed on a photopolymer letterpress printing plate, which had been exposed to light and rinsed off…
Nonliteral	After preparing a photopolymer letterpress printing plate by exposing it to light and rinsing it off, the product was sprayed on…

The nonliteral translation is unacceptable because it adds the lexemes "after" and "preparing."

Equivalent Phrasing

As the term implies, the conservation of lexemes approach is applied at the single-word level. Because patents make very little use of idiomatic or colloquial language, this low-level approach can often be used without running into many problems. Even in patents, however, there are phrases and terms that cannot be adequately translated with exactly the same lexemes in the source and the target. In these cases, we must use equivalent phrasing.

Equivalent phrasing is the use of a phrase or a term in the target text that contains lexemes different from those in the source text but is functionally equivalent to a phrase or term in the source text. We can use this approach when the equivalence is very well established (usually, but not always, when the equivalence is listed in a dictionary) and when conserving the source lexemes would lead to undue confusion or a highly unnatural style.

For example, some well-established equivalents and idioms are translated in this way: "l'homme du métier" is not translated as "man of the trade" but as "those skilled in the art," and "Nationalisierung" is not translated as "nationalization" but as "entry into the national phase." This approach can also be used in situations in which the

meaning and register are best reproduced by translating an entire phrase using different words. For example, "電源の切り忘れを防止し得る" translates literally as "it is possible to prevent forgetting to turn the power off," which is confusing and awkward in a way the source phrase is not. To avoid misrepresenting the source text, it may be better to translate this phrase as, "it is possible to prevent the power from being accidentally left on."

It is worth remembering, however, that in the literal translation of patents, equivalent phrasing should be the exception, not the rule. As a mental exercise, we can imagine ourselves in a courtroom, standing in front of a whiteboard on which we have diagrammed the one-to-one correspondence between the source text and the target text. Clearly, this is easy to do if we use the conservation of lexemes approach, but if our diagram is to include equivalent phrasing, the equivalence should be of the sort that no one could disagree with.

As a mental exercise, we can imagine ourselves in a courtroom, standing in front of a whiteboard on which we have diagrammed the one-to-one correspondence between the source text and the target text.

Generally speaking, equivalent phrasing is used more often when the translation will be used for filing and less frequently when it will be used for litigation. Table 1 gives an indication of which way to lean when choosing between the two approaches.

Table 1: Types of Literal Patent Translation

Purpose of Translation	Appropriate Uses	Favored approach	Annotations
For legal information	• Researching prior art • Writing an opinion or responding to an office action • Preparing a case for litigation • Developing a research and development strategy	Conservation of lexemes	Allowed
For evidence	• Invalidating or defending against invalidation or proving priority before a patent office or in court	Conservation of lexemes	Not allowed
For foreign-language filing	• Subsequent to filing with a patent office in a language other than the official language of that patent office	Conservation of lexemes	Not allowed
For PCT filing	• Entering the national phase in another country	Equivalent phrasing	Not allowed

Provide Appropriate Annotation

Annotation may or may not be suitable depending on how the translation will be used. In cases in which annotation is not suitable, you may want to provide two versions of the translation: one with annotation for your client's reference, and one without annotation, which your client can submit to the patent office or court.

It is not uncommon for patents to include mistakes, such as typographical errors, editing errors, inconsistencies, and the like. This is natural, considering that patent specifications are often written in great haste. These errors can actually be of use to our clients in some circumstances. In other cases, the law forbids the correction of errors as part of the translation process. Nonetheless, we do not want the client to imagine that these errors are the result of sloppy writing on our part. To indicate that

the error was in the original, we simply insert the notation [*sic*] after the error.

With practice, we can almost always find a way to draft the target text so as to include all of the lexemes that are in the source. However, in some circumstances—particularly when translating from languages in which certain parts of speech are only implied—it is impossible to make a good target sentence without adding a lexeme or two. If this is the case, we can indicate that these lexemes do not come from the source by enclosing them in square brackets. There is usually no point in placing square brackets around function words unless they are part of an entire phrase that must be inserted.

Translator's notes, which are usually inserted in the form of footnotes, can also be useful when the subject matter is culturally specific or when there is a linguistic problem or ambiguity that cannot be fully expressed by literal translation.

CONCLUSION

Literal patent translation can be an enjoyable challenge, akin to solving a *New York Times* crossword puzzle, playing chess with tournament rules, or playing a game of tennis with the net set a little high. At the same time, because certain methodologies and rules can be brought to bear on our task, we can often work much faster and with greater confidence than other translators.

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Online Resources

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- Patent Cooperation Treaty, http://www.uspto.gov/web/offices/pac/mpep/documents/appxt.htm
- U.S. Patent and Trademark Office, http://www.uspto.gov
- U.S. Manual of Patent Examining Procedure, http://www.uspto.gov/web/offices/pac/mpep/index.html
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