

An Investigation of Terminology and Syntax in Japanese and US Patents and the Implications for the Patent Translator

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Abstract: The paper discusses the results of the author's investigation of terminological and syntactical phenomena occurring in Japanese patent publications and US patents, as well as a comparison of such phenomena with the terminology and syntax recommended in publications intended for the patent professional and the layperson. A number of syntactical quirks of Japanese and US patent claims are discussed, including connectives and two-kanji verbs used to describe physical relationships in Japanese claims, the one-sentence rule, and strict adherence to proper usage of articles in US patent specifications. The impact of these and other phenomena on Japanese-to-English translation of patents for both information and US filing is discussed.

1. Introduction

With over 20,000 US patents granted to Japanese applicants yearly, the volume of English patent specifications required for US filing alone surely exceeds the million-page mark each year. Much of this for-filing translation seems to be done in Japan. Add to this the for-information J-E translation of patent documents done chiefly outside of Japan, and the size of the J-E patent translation market grows to even more dramatic proportions. Yet in spite of this volume, there has been little written about J-E patent translation, leaving both the for-filing and for-information translator with little more than instincts, rumors, and some very blurry guidelines by which to work.

In an effort to gain an understanding of both the formal expectations and the realities of Japanese and US patent language, the author undertook an investigation of a sample of patents of both countries. The goals of this investigation were: to identify terminological and structural quirks in both Japanese and US patents, to test actual patents against the guidelines found

in sources intended for patent professionals, and to gain an understanding of what constitutes patent-specific language usage, as opposed to more generic technical language.

2. Overview of the Study

2.1 Sources of Patent Documents

The Japan Patent Office database and open stacks of Japanese and US patents provided the raw data (patent documents) for the study. One commonly used method of classifying patents is into the large groups of electrical mechanical, and chemical patents. Because the author has no specialized knowledge in the area of chemistry, only electrical and mechanical patents were sampled. The sample consisted of the following sub-groups. 100 Japanese patents: 50 patents held by Japanese entities 50 patents held by US entities 100 US patents: 50 patents held by Japanese entities 50 patents held by US entities Distinction by the nationality of the patent holder was for the purpose of identifying any trends which might be related to the translation process.

2.2 Formation of a Picture of Prescribed Guidelines

A fairly large number of books on drafting patent documents, with heavy emphasis on patent claim drafting, was available for US practice. Some of these sources are listed in the bibliography. On the Japanese patent practice side, very little in the way of books written for patent professionals was available. This lack of written material was confirmed in interviews with patent agents, who tended to comment that on-the-job training is the way most *benrishi* cut their teeth in the patent drafting field.

Among the Japanese-language books which could be of use to the J-E translator in getting at least a minimal background in Japanese patents, with perhaps some hints as to how and why Japanese patents are drafted, are the following two sources.

Agata, Akira. 1989. *Kaitei tokkyo meisaisho no kaisetsu* (改訂特許明細書の解説). Tokyo: Kodansha

and

Takeda, Kazuhiko, 1989. *Tokkyo no chishiki: sono riron to jissai* (特許の知

識：その理論と実際). 3rd ed. Tokyo: Diamond.

Note, however, that these books (even Agata's) devote almost no space to the specific language used in patents to the extent that they would be much use to a translator, but rather concentrate on the patent system and the prosecution of patent applications, providing sample Japanese patent claims along the way, but with almost no explanation of why things are phrased as they are.

3. The Purpose of J-E Patent Translation

While the reasons for translating a Japanese patent document into English might seem obvious, they warrant some thought, as they can and should affect the attitudes and strategies of the translator.

3.1 Translation for Filing

When the ultimate goal is a document submittable to the USPTO, the translator's marching orders are clear: write in US patent style. Anything less just places more burden on the next process in the production flow, which necessarily becomes the "translation" of Japanese patent style written in English to US patent style written in English. Arguments can perhaps be made that the effort to achieve US patent style is not worth it for the translator, but if the translator is capable of doing this, and can either get enough payment or live with sufficient payment, the goal should be US patent style. An important fact here is that some clients in Japan specifically ask that English translations be made as close as possible to US patent style, and of these some even rearrange the parts of the document to facilitate translation, although these mechanical aspects are the least of the translator's worries, as will be discussed later.

3.2 Translation for Information

When the translator is told that a patent is to be translated for information purposes, rather than shutting off and blindly translating a Japanese-style patent text into a Japanese-style patent text which just happens to be written in English, the translator should consider why someone might want to read the document, and who that someone might be. Several possibilities come to mind.

- A US patent attorney needing to know the details of an invention already patented in Japan for the purpose of advising a US client with regard to filing a patent application in Japan.
- A US attorney attempting to have a US patent held by a Japanese entity declared invalid, and needing to know the details of the Japanese patent used by the Japanese entity to establish the priority date in the prosecution of the US patent application. An engineer or scientist in the US currently developing or applying new technology and wishing to know whether anybody has "gotten there first."

While patent translators operating in the US often voice the opinion that patent translations from J to E must be absolute mirrors of each other, my approach would be to verify this with the client before making an assumption. One problem a US translator can get into is related to the often-seen *からなる* construction, which is normally considered an open expression in Japanese (from interviews with *benrishi*), but which some translators would be inclined to render as "consists of," in spite of the fact that "comprising" would be closer. In cases in which the translation might find itself being presented as evidence in litigation (and the translator should always verify whether this is a possibility), the translator should not rearrange sections or combine sentences (even outside the claims), as a translator working for US filing normally is called upon to do, since it would cause great consternation when trying to compare Japanese and English versions for litigation purposes.

4. Terminology/Syntax Issues in Japanese Patents

4.1 The Bounds of Patent-Specific Terminology

Patent translators are often directed to what purport to be dictionaries (but which are usually merely word lists) of patent terminology, and the very existence of such books seems to have helped nurture the notion of a mystique surrounding the terminology used in both Japanese and US patents. If the content of some of the available word lists is any indication, this mystique is highly overrated. For example, one set of patent terminology dictionaries (Iida 1981; Iida 1982) consists of an E-J volume very heavily weighted toward explaining non-Japanese patent concepts to Japanese readers, and a J-E volume which is very heavily padded with technical terms

having nothing whatsoever to do with patent language as such. These terms could very well be found in more conventional dictionaries, and would be in the normal terminology arsenal of any translator truly prepared to tackle a patent in a particular field. The author estimates that the latter's 256 pages could be cut to under 100 pages by eliminating generic technical terminology which has no particular relationship to the language use only in patent documents. Such a radical reduction in size, however, would probably not be consistent with the goal of producing a commercially viable book.

Terminology used in Japanese patents can be classified into practice-related terms which are heavily weighted with terms used in the prosecution of a patent application, and technical patent language used in the actual body of a patent document.

4.2 Practice-Related Terms

All the special patent practice-related terminology most J-E patent translators will ever encounter can be covered in a word list having fewer than 200 terms.

More than one patent/law office in Japan has produced such low-fat word lists, the contents of which are quite adequate, although they do contain some English which appears odd to native English writers.

4.3 Technical Patent Language

4.3.1 Wo Tokuchou to Suru

The phrase を特徴とする, which appears at the end of most Japanese patent claims, is a source of worry to some translators. Other translators render this phrase as "characterized by" and worry no further, which is probably an acceptable strategy in for-information translation done outside of Japan. In for-filing translation for the US, at least with regard to electrical and mechanical patents, it is virtually never seen as an expression. The sample of 100 US patents examined revealed only one patent which used "characterized" in the claims.

4.3.2 Two-Kanji Compounds

One class of term used in Japanese patents that presents difficulties for the J-E translator is the two-kanji compound of the type that is often used to

indicate a relationship between elements in an invention. Every *benrishi* the author asked indicated that use of the more difficult terms in this class is actually deprecated, and further that in fact the JPO (Japan Patent Office) recommends against using such terms, favoring plainer expressions. The actual rules for preparing Japanese patent specifications include the following language (Sugibayashi 1989, 275).

6	文章は口語体とし、技術的に正確かつ簡明に発明の全体を出願当初から記載する。この場合において、他の文献を引用して明細書の記載に代えてはならない。
7	技術用語は、学術用語を用いる。
8	用語は、その有する普通の意味で使用し、かつ、明細書全体を通して統一して使用する。ただし、特定の意味で使用しようとする場合において、その意味を定義して使用するときは、この限りではない。

These rules, evidently, have not taken hold with the people drafting Japanese patents. The author, however, could find no books written by or for patent professionals which even make mention of the above-noted class of two-kanji compounds. Strangely enough, at the time of the study the only books the author could locate which allotted any space to these compounds were written for the layperson aiming at making "big money" in the patent field by a (Juzo Ishii) who has been the target of severe criticism from patent professionals in Japan. His books usually include a last chapter which is aimed at getting readers to take courses given by his organization for a qualification they call the 特許管理士. At least one Japanese patent attorney interviewed mentioned that people with such an "unofficial" qualification would not like to be found working in patent and law offices working with patents. However, whereas the source of these books might be impeached as being just another for-profit 資格屋 aiming to sell questionable qualifications, a practice that is very common in Japan, Ishii's books (Ishii 1988; Ishii 1990) do provide an interesting list of hundreds of these arcane compounds that often puzzle the J-E patent translator. Some examples are as follows.

挟着	挟んでとりつける
張設	張った状態に設ける
螺入	ねじ込む

While these compounds are rarely found in either specialized or general dictionaries, their meanings can very often be understood from the meanings of and *kunyomi* readings of the individual characters, as evidenced by the manner in which they are glossed, which often is just a *kunyomi* reading of the original term.

4.3.3 Kara Naru

There is no place to go in Japanese dictionaries to find out that this expression is equivalent in meaning to "comprising" or "comprises" as they are used in US patent practice, and that this expression is, like those US equivalents, open, in that it allows the inclusion of other, non-explicitly recited elements. However, although interviews with *benrishi* indicated that this is indeed the case, none of these professionals could point to anything other than court cases as justification for this opinion. Ultimately, as in the US, the language in a Japanese patent is often not interpreted strictly until it is considered by a court.

Consider the following type of claim. A と、B と、C とからなる F.

Using the above-noted Japanese interpretation of からなる, this claim, therefore, includes also an invention F' which has an A, a B, a C, and additionally a D (provided D is not an element essential in achieving the effect claimed for the invention). Stated more precisely, the above claim, if accepted, could prevent someone other than the patent holder from manufacturing an invention F' which has an A, a B, a C, and a D, even though D is not explicitly recited as an element in the claim. The implication of this for the translator is simple; からなる should evoke the expression "comprising" or "which comprises" when writing for someone in the US, and certainly when writing a US specification from a Japanese-language specification. The translator insisting that the expression からなる is interpreted as closed by Japanese readers and therefore should be rendered

as “consisting of” demonstrates a lack of familiarity not only with the special interpretation of からなる in Japanese patent language, but also with US patent practice with regard to the term "comprising."

The open nature of "comprising" is supported in many sources dealing with US patent practice (Calvert 1964, 135; Landis 1974, 11; Armstrong & Nikaido 1986, 70; Faber 1990, 11-12).

Post-Presentation Update

References to Landis and Faber cited in the original paper were made before the appearance of the 4th edition of Faber's Landis on Mechanics of Claims Drafting, published in 1996 by The Practising Law Institute. This newest edition of the Landis classic is greatly expanded and comes in a sturdy metal binder. The publisher issues replacement pages for sections requiring updating.

4.3.4 Gai, Togai, Zenki, Jouki

At first glance, it might appear that drafters of Japanese patents use the terms 該, 当該, 前記, and 上記 with discrimination, assigning specific terms to specific distances between the appearance of the term and the position of the referred-to element. However, a close look at actual Japanese patents revealed the following phenomena.

A number of patent drafters appear to use one of the above terms to the exclusion of the others, regardless of the positional relationship to the element being referred to. No detectable uniformity in usage of these terms between different patent drafters could be clearly identified, with the possible exception that there is a high occurrence of gai when referring to an element just named in the text.

While this appears to be a real issue, an examination of US patents revealed the use in claims of said almost exclusively, and it appears that the phrases "above-noted" and "previously noted" and the like are used interchangeably elsewhere in patent specifications in the US. Naturally, these latter expressions would not be used in claims.

4.3.5 Kisai No

This expression is often seen in a dependent claim to refer to the claim upon

which it is dependent. A typical usage of 記載 is as follows.

2. 突起または凹部の形状が三角である特許請求の範囲第1記載の穴あけ治具。

In the above example, the bold portion would normally be rendered with an expression such as "according to claim 1." An examination of US patents reveals expressions such as "according to claim N" and even the rather strange-sounding "as claimed in claim N." It appears from the author's experience with patent litigation that in the speech of patent attorneys, "recited in seems to be the expression of choice for speech.

4.3.6 Ni Oite

The translator is often faced with the following structure. Aにおいて、Nからなることを特徴とするA.

The translator might be tempted to start off with "In an A, an A comprising N," but aside from being rather strange sounding, this structure makes it look like original drafter intended a special type of claim known as a Jepson (or improvement) claim. In its true form, this claim often is in the following form (Landis 1974, 169). In an XX, the improvement, comprising...

The problem with this is that the Japanese claims drafter seldom intends a true Jepson claim, and the Jepson claims are indeed very rare in US patents (only 1 being discovered in the 100 sampled US patents), in comparison to the above-noted "ni oite" structure in Japanese. One patent professional has identified five forms in which this "ni oite" can appear, only one of which he actually identifies as corresponding to a Jepson claim format (Tanabe, 1989, 234-235). In almost no cases is the double recitation of the name of the invention justified, nor was such a double recitation found in the sample of 100 US patents.

5. Terminology and Syntax Issues in US Patents

5.1 US Patent Practice

Developing a working knowledge of US patent practice is a time-consuming and therefore profit-diluting activity for the working professional translator. However, such knowledge is certainly desirable if the translator is committed to writing patent documents in the style expected by the reader, and

absolutely necessary when translating for filing in the US, unless the translator is resigned to doing just half the job.

The author has heard arguments that this is further than the translator should be expected to go, simply because clients expect that translators would be incapable of that level of work.

The author's experience with clients (*benrishi*) in Japan is that of being regularly requested to create documents in a style that is as close as possible to being filable with the USPTO.

5.2 The Prescribed Formulas and the Realities

The situation with regard to what the books say to do and what actually is done in drafting US patents is vastly different from the author's experience with Japanese patents.

To start with, unlike the situation with Japanese patents, there are many sources available which explain how to draft patent documents, these being focused mostly on the claims of the patent, which, for all intents and purposes, define the invention.

In general, the advice offered in English-language sources is followed quite closely by patent professionals who draft patents. Thus, it is possible to see what acceptable US patent style is by merely examining US patents, with books on patent claims drafting providing the theory and reasons for that style.

5.3 Referring to the Invention

The 本發明 almost exclusively used in Japanese patents can be rendered as "this invention," "the invention," and several other expressions. It is not a subject of particular concern.

5.4 One-Sentence Rule

Beginning patent translators often find the seemingly endless sentences of patent documents the biggest hurdle. Once one gets used to parsing them (to only a reasonable depth, it must be added), long claims are not at all that frightening. Long, yes; frightening, no. It just takes experience.

A claim in a US patent is basically a single sentence, starting most often with

the phrase "What is claimed is," and followed by a noun clause representing the invention. In the case of a multiple-claim patent (the usual case), there is a slight modification in that the introductory phrase ends in a colon and is followed by a series of numbered noun clauses, each one capable of completing a sentence after the introductory clause.

The one-sentence rule must not be violated in claims, regardless of any perceived advantages in doing so.

The following facetious (and also probably unpatentable) invention is presented as an example of the typical structure of claims in a patent with both independent and dependent claims.

What is claimed is:

1. A gaming parlor comprising:

a main enclosure;

a plurality of gaming machines located inside said main enclosure, each of which has an aperture, said aperture having a shape and size that allows small playing objects to be inserted into said gaming machine, and means to propel said small playing objects which is controllable from the outside of said gaming machine;

a machine which, in response to the insertion of paper currency outputs a predetermined number of said small playing objects; and

a counter at which customers can exchange said small playing objects for a predetermined number of prize objects.

2. A gaming parlor according to claim 1, wherein said small playing objects are metallic spheres.

3. A gaming parlor according to claim 1 or claim 2, further comprising an external enclosure outside of and in proximity to said main enclosure comprising a window at which customers of said gaming parlor can exchange said prize objects for currency.

4. A gaming parlor according to claim 3, wherein said external enclosure further comprises an alarm-sounding means which detects the nearby presence of a person with a masked face approaching said external enclosure,

whereby when said presence is detected, an audible alarm is sounded.

While the above "invention" (a pachinko parlor) is most like not patentable in the above form, it does present the basic features of a series of claims.

Several points to note about the above set of claims:

- There are one independent and three dependent claims, of the dependent claims being multiply dependent in an alternate fashion (claim 1 or claim 2)
- A dependent claim can be dependent upon one or a number of claims. Note, however, that it cannot be dependent upon any more than one claim at a time (Armstrong & Nikaido 1986, 68-79).
- Subparagraphing as shown in claim 1 is not only allowed, but actually is recommended by the USPTO to improve the readability of claims.
- When subparagraphing, major elements are generally separated by semicolons.

The first time an element appears in a claim, the indefinite article "a" or "an" is used. Thereafter (and only thereafter) the definite article is used. A "means for" clause, however, requires no article when it starts with the word "means" (Landis 1974, 29).

The often-used term can be dangerous, since its use is quite improper unless the item that follows actually results from the item preceding the term (Armstrong 1986, 106).

To use this term with confidence, the drafter of the claims (and the translator) must fully understand the way the invention operates, a reality which the necessity to finish a translation can make it easy to forget.

5.7 Said

In one were to award a prize to the single word that most effectively distances patent documents from normal English style in the eyes of the inexperienced translator, the hands-down winner would be the word "said." This word is used almost exclusively in US claims to replace the word "the." It was used in every US patent in the examined sample of 100 patents. However, "the" would serve just as well, according to at least one book

written for patent professionals (Armstrong, 1986, 102). The redundant "the said" is universally deprecated.

5.8 Independent and Dependent Claims

As briefly touched upon with reference to the facetious series of claims presented in Section 5.4, claims are either independent, dependent (on an earlier recited claim), or dependent on one of a recited group of earlier claims. Examination of the sampled US patents revealed a considerable variety in the phrase used to refer to the independent claim (in a dependent claim), the following being the list of occurrences.

...according to claim N	37 patents
...of claim N	22 patents
...as in claim N	11 patents
...[as] set forth in claim N	7 patents
...in accordance with claim N	7 patents
...as recited in claim N	5 patents
...[as] claimed in claim N	4 patents

From the above, the translator wishing to conform to the consensus would select "according to claim N" or perhaps its variant "in accordance with claim N."

5.9 Generic Language

The goal of the patent claim is often likened to that of a fence enclosing the invention and protecting it from violation by imitators. The use of generic language, as opposed to specific language, allows the area thus fenced in to be made larger, thereby more effectively locking out imitators. The generic nature of terms used in Japanese claims should, therefore, be preserved in English versions of claims.

For example, in a patent for a ball-retrieval system for a pachinko parlor, the pachinko machines are referred to as 弾球遊戯機械, when the drafter could very well have used the more specific term パチンコ機械. However, the latter would have allowed someone to make an invention that is similar but which is applied to a US-style pinball machine, which would not have been permitted by the language 弾球遊戯機械, which encompasses both types of machine.

The translator should strive to maintain the same level of genericity, even if that means coining words, which has been allowed in practice, with certain restrictions, including a prohibition against using terms in a manner which is contradictory to their conventionally accepted meanings (Landis 1974, 25-26).

6. Patents Held by Japanese Entities

There was no discernible difference between the basic terminology and structure used in the English of US patents held by Japanese entities and US patents held by US-based entities, this probably attributable to the US patent professional ridding the documents of Japanese stylistic and terminological artifacts before filing. In fact, the single "characterized" occurred in the sample of US patents held by US entities.

Post-Presentation Update

A subsequent investigation of US patents using the phrase "characterized by/in" reveals that many electrical and mechanical patents which include this phrase originated in Europe, a phenomenon which is cited in the literature (Armstrong 1986). Another phenomenon was the use of this phrase in chemical patents by even US entities.

7. Conclusions

The examination of the sampled Japanese and US patents and references dealing with language used therein revealed several things.

There is virtually nowhere to go except to Japanese patents themselves to discover what language is used in Japanese patents, since very few books are available which deal at all with the nuts and bolts of writing patent documents in Japanese.

One often-recommended J-E patent dictionary proved to be quite heavily padded with non-patent terms.

Japanese use of such terms as 該, 当該, 前記, and 上記, does not follow any expected pattern, in spite of the theoretical differentiations which might be made.

There was good correlation between the prescribed language in widely used US books on patent practice and claims drafting (Landis 1974; Faber 1990; Kayton 1985) and the actual language encountered in US patents. This is a fortunate situation for the J-E translator trying to learn US patent style, but not having a large stock of US patents to study.

The above study on patent style and terminology is neither exhaustive nor definitive. It was conducted merely for the author's own edification. However, the author must admit to the slight hope that it might trigger a dialog between J-E translators on the hardly ever talked about subject of J-E patent translation.

Thanks are due to JAT members Ichiro Takahashi and Ron Granich for providing references, and to numerous *benrishi* who provided answer to questions concerning the real reasons behind the style of Japanese patents.

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