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# Writing Device Patent Specifications (Beginner course)

Goal for this training course:

Learn the necessary principles in acquiring patents (how to **interpret** inventions) and how to write application documents based on those principles.

Chapter 1 Introduction  
Chapter 2 Preparations before writing the Specifications  
Chapter 3 How to write the different parts of the Specifications  
Chapter 4 How to write the Scope of patent claim  
Chapter 5 How to write the Drawings and Abstract

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# Chapter 1

## Introduction

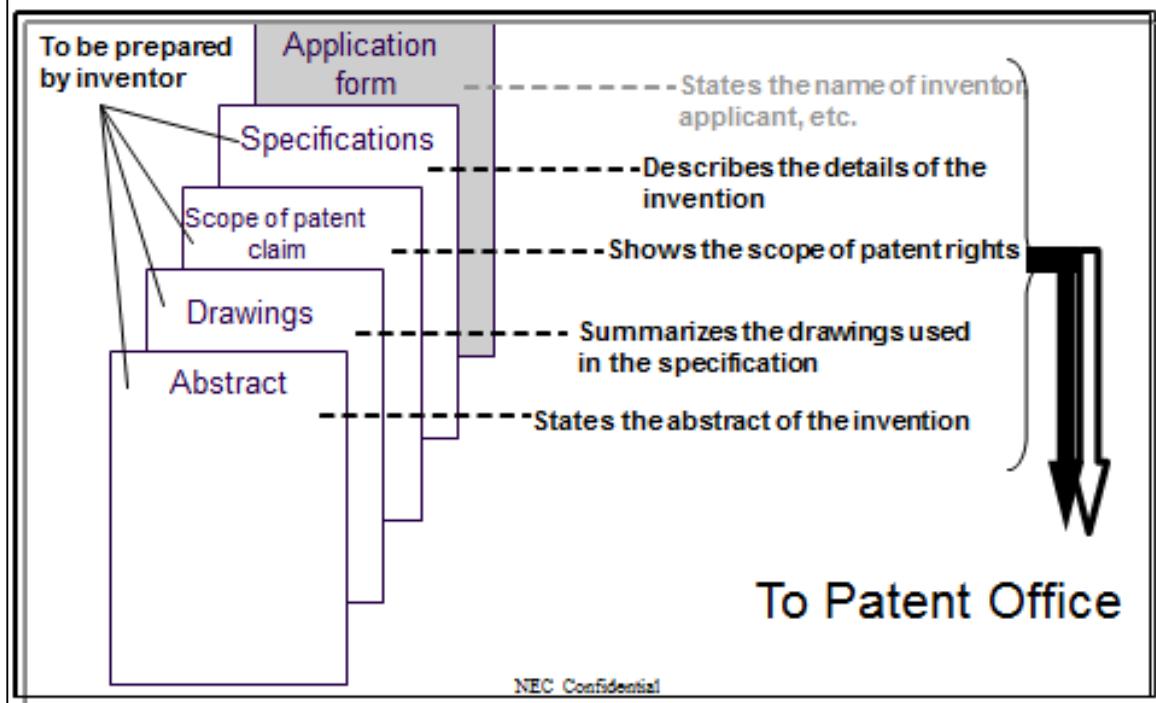
Learning goal for this chapter:

To confirm the minimum necessary items that need to be understood before going into the main topic, such as the purposes and composition of the different application documents

- Documents needed in the application
- Role of "Specifications" and "Scope of patent claim" documents
- Pointers in writing the Specifications
- Things to understand in writing the Specifications

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## Documents needed in the application

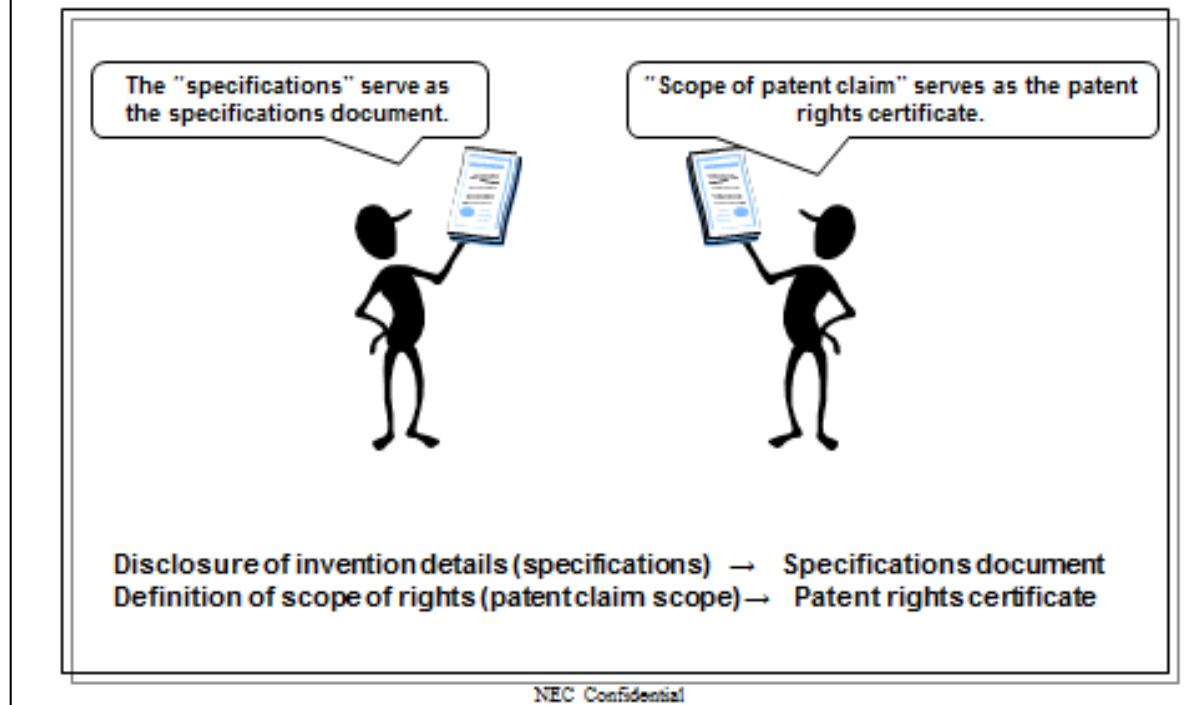


First, we will explain the documents needed in submitting a patent application.

Acquiring a patent requires submitting to the Patent Office an “application,” as well as “specifications” explaining the details of the invention, “scope of patent claim” indicating the scope of patent rights, “drawings” used in the explanation in the specifications, and an “abstract” of the invention. The inventor needs to write all the documents other than the application, namely, the specifications, the scope of patent claim, the drawing, and the abstract. The formats for preparing these documents have been specified in the patent law to standardize the disclosure of all patents.

All procedures made with the Patent Office, from application to rights acquisition, must in principle be made on the basis of the documents submitted in writing during application rather than through verbal communication (document/paper-based). Thus, submission made through verbal communication or by presenting the actual object is not accepted.

## Role of “specifications” and “scope of patent claim” documents



The “Patent right,” which is granted in exchange for public disclosure of an invention, is a very powerful right that ensures exclusivity to the use of the said invention. The “specifications” serve to making the details of the invention widely known, and is otherwise known as the “specifications document” of the invention.

The “scope of patent claim,” on the other hand, defines the scope of the exclusive technical right acquired in exchange for public disclosure of the invention, i.e., it can also be referred to as a certain kind of “rights certificate” or “title.”

## Pointers in writing the specifications

- ◆ **Full description:**

Fully describes needed details for a person skilled in the art to implement the invention



- ◆ **Consistency with "scope of patent claim":**

Covers the technical scope of the invention described in the scope of patent claim



\*Any inconsistency in the specifications can lead to failure in acquiring patent rights, regardless of how good the invention is.

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The “Patent right,” is an exclusive right granted in exchange for public disclosure of an invention. This entails the duty of disclosing the contents of the invention in the Specifications in a manner that will enable other companies (persons) to understand the invention and carry out further technical development. Thus, the specifications should fully describe details needed for any person skilled in the art\*1 to implement the invention. Further, the specifications should be consistent with the “scope of patent claim,” i.e., its contents cover the technical scope of the invention described in the scope of patent claim.

Thus, a “well-written specification” is one that is consistent with the scope of the patent claim, as well as written in such a way that any person skilled in the art can implement the invention. This tells us that no matter how good the invention is, if the specifications are not well written and is inconsistent with the scope of patent claim, patent rights cannot be obtained for the invention.

Acquiring patent rights requires writing a well-written specification.

\*1 A “person skilled in the art” is defined as a “person who possesses the ordinary skill in the technical field into which the invention falls.”

## Things to understand in writing the Specifications

Writing a well-written specification entails:

→ Accurately recognizing the key point of the invention and creating an outline of the specifications.

- What is the background art (previously known (well-known) technologies related to the invention)?
- What is the problem to be solved by the invention (unresolved problems in the background art)?
- What are the means for solving the problem?
- What are the new advantageous effects afforded by the invention?

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Writing a well-written specification entails accurately recognizing the key point of the invention. This, first of all, requires an understanding of the background art, i.e., the previously known (well-known) technologies related to the invention being submitted. The key point of the invention can be determined by making a multifaceted comparison of what you think consists your invention with the background art and figuring out what makes your invention different. Clarifying the problem to be solved by the invention and the means for solving the problem and considering why previous technologies could not solve the problem and what new advantages are offered by the invention are helpful steps in accurately recognizing the key point of the invention. Thus, you have to think of the outline of the specifications by sorting the background art, problem to be solved, means for solving the problem, and the advantageous effects of the invention. Also, you can come up with variations to the invention by adding different component elements to the key point of the invention.

We will study the details of the above processes in Chapter 2.

And in Chapter 3, we will learn about how to write each item of the Specifications and the details about how to write the Scope of patent claim.

## Chapter 2

### Preparations before writing the Specifications

Learning goal for this chapter:

To understand the items that need to be considered before  
writing the Specifications for an invention,  
And, to learn how to summarize an invention.

1. Interpreting the invention
2. Multifacetedness of the invention

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## Chapter 2-1

# Interpreting the invention

Learning goal for this section:

To learn how to properly interpret the invention for writing of the Specifications

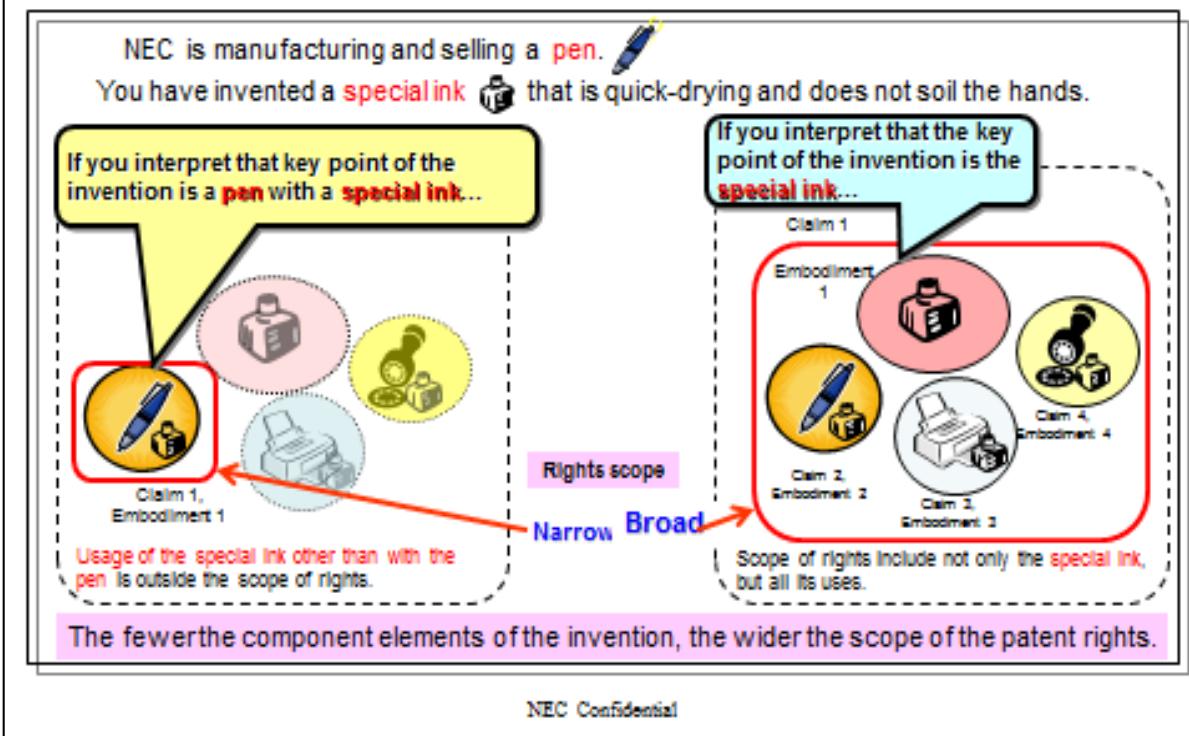
- Identifying the key point of the invention
- How to identify the key point of the invention
- Differentiating from background art
- Creating an outline of the specifications
- Determining variations and methods for coming up with variations

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This section explains the following five items in order:

- (1) Identifying the key point of the invention
- (2) How to identify the key point of the invention
- (3) Differentiating from background art
- (4) Creating an outline of the specifications
- (5) Determining variations and methods for coming up with variations

## (1) Identifying the key point of the invention



The key point of the invention is the minimum component element necessary in solving the problem (minimum component). But why is there a need to extract the key point of the invention? Consider the following example. NEC is manufacturing and selling a pen. You then invented a special ink to be used for the pen. For comparison we will show two ways to interpret the invention:

1. The key point of the invention is the “pen” that uses a “special ink.”
2. The key point of the invention is the “special ink.”

For a patent obtained for the invention through an application made based on the first interpretation, any usage of the ink other than with the pen falls outside the scope of the patent rights. Even the special ink itself is outside the scope of rights.

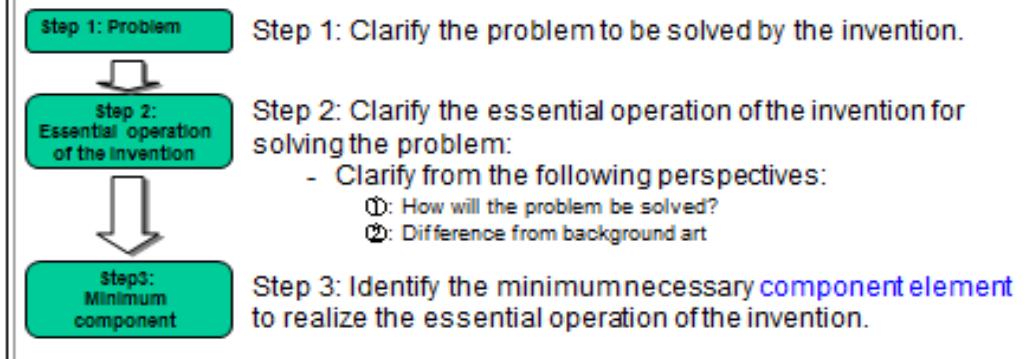
On the other hand, for a patent obtained through an application based on the second interpretation, the special ink, as well as any usage of the ink is within the scope of the patent rights. Since rights can be obtained for use of the special ink not only for the pen, but also for printers, signature stamps, and other uses, the patent obtained covers a broader scope of rights.

Thus, as exemplified by the second interpretation, you can create a stronger patent with a broader scope of rights if you recognize that the key point of the invention is the special ink and that it can be used in a wide array of applications. This is why identifying the key point of the invention is very important.

## How to identify the key point of the invention.

### What is needed in identifying the key point of the invention?

For example, you can identify the minimum necessary component element through the following steps:



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For example, you can identify the key point of the invention through the following steps:

Step1: Clarify the problem to be solved by the invention

If there are many existing problems with the background art, figure out the minimum problem that the invention should solve. Also, if the interpretation of problems with the background art is too concrete, think of a problem at an abstract and conceptual level.

Step2: Clarify the essential operation of the invention for solving the problem.

The invention solves the problem through some kind of operation, so you must figure what that “operation” is. For example, you can do this from the following two perspectives.

For this purpose, it is effective to take a step further to examine the physical phenomena and operation principles behind the invention (test result).

① How was the problem solved?

The component element of the invention carries out some kind of “action” to solve the problem, so you must figure out what the particular “action” is, which is called the “operation” of the invention.

② Difference from background art

From among the identified “operations,” the “essential operation of the invention” is one that is not found in the background art.

Step3: Identify the minimum necessary component element to realize the essential operation of the invention. To understand the constituting elements minimally necessary for problem solution, it is effective to capture the principle underlying the problem solution by taking a step further to consider the physical phenomena and operation principles behind the invention (test result).

Identify what the minimum necessary component element is to realize the essential operation of the invention. Inexistent elements or elements whose performance tend to deteriorate to some degree are not the minimum necessary component elements. Identify the minimum necessary component element (minimum component element), i.e., the key point of the invention, by considering what the minimum essential means is in solving the problem.

## (2) Differentiating from background art

Determine whether the key point of the invention you identified can become a patent or not.

Registering an invention as a patent entails that the invention possesses "novelty" and "inventive step."

Novelty: the invention is objectively new

Inventive step: difficult to create the invention (not easy to come up with invention)

Closely examine and clarify the differences from background art related to the invention before making an application.

Determine differences of the identified key point of the invention from the background art.

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After identifying the key point of the invention, determine whether that key point can become a patent or not. Making a patent application for the invention is meaningless if the key point of the invention is not patentable in the first place.

Registering an invention as a patent entails that the invention possesses "novelty" and an "inventive step."

Novelty refers to being objectively new\*3.

Inventive step refers to the difficulty\*4 in creating the invention (not easy to come up with the invention).

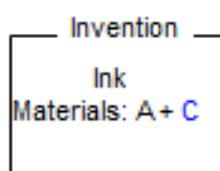
These are judged by comparing the invention with the background art. If there is background art similar to the invention, then the differences from the background art should be determined.

If a search of background art is not performed prior to the application, unexpected patent documents may come up after filing the application.

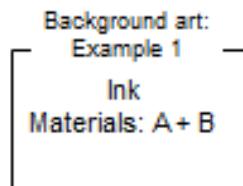
To avoid a situation wherein you are left with no option but to abandon the patenting process, you must determine the differences from background art before making an application.

## Differentiating from background art (novelty)

For background art Example 1



Ink itself is different  
(Different components)



The invention is considered novel if the component of the invention  
is different from that of the background art.

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This slide explains the differentiation from background art using the ink example.

The invention is an ink made up of materials A and C, while the background art Example 1 is an ink made up of materials A and B.

Since the invention has different components from that of the background art Example 1, then the invention is considered to possess novelty.

Thus, an invention is judged as novel if the components are different from those of the background art

## Pointers in differentiating from the background art

For background art Example 2

Invention  
Ink  
Materials: A + C  
Effect: quick-drying

No novelty  
Ink is the same  
(the same components)

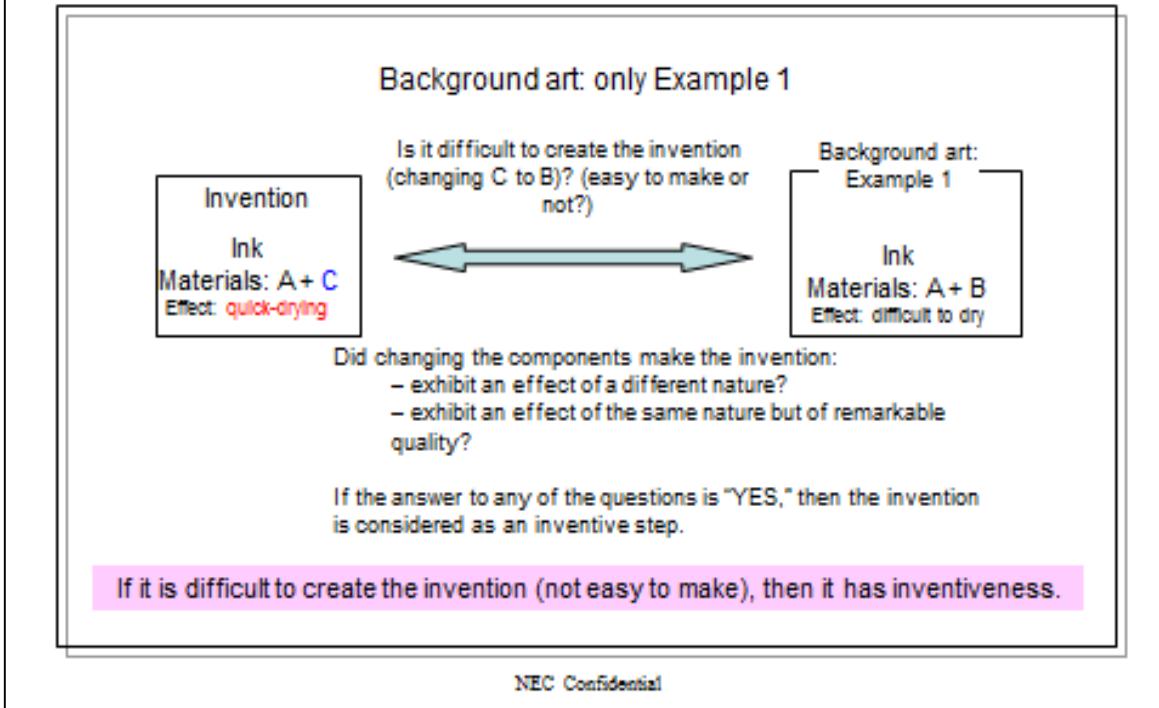
Background art:  
Example 2  
Ink  
Materials: A + C  
Effect: Odorless

If the components of the invention are the same as those of the background art, then there is no novelty.  
(Effect does not count in judging novelty (whether new or not).)

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- What about for the next example?
- The invention is an ink made up of materials A and C, like the background art Example 2. The invention, however, emphasizes its quick-drying effect, while the background art Example 2 emphasizes its being odorless.
- Some of you may probably think that the invention possesses novelty since the effect is different from that of the background art. However, this means that since the background art Example 2 is made of the same materials A and C, it is the same as the invention, and must therefore also possess the same quick-drying effect, despite of the effect not having been emphasized. Thus, even if the claimed effects are different, as long as the components are the same, the invention will be judged as not having novelty.

## Differentiating from the background art (inventive step)



Now let's consider inventiveness using background art Example 1.

If it is difficult to change the components of the invention from A + B to A + C, then, based only on Background art Example 1, the invention is considered to be an inventive step.

Determining whether changing the materials constituting the invention is easy or not is made by determining whether the change has led to the invention exhibiting any effect that is different from the background art, namely, either:

- an effect of a different nature, or
- an effect of the same nature but of a remarkably different quality (beyond what the background art can achieve).

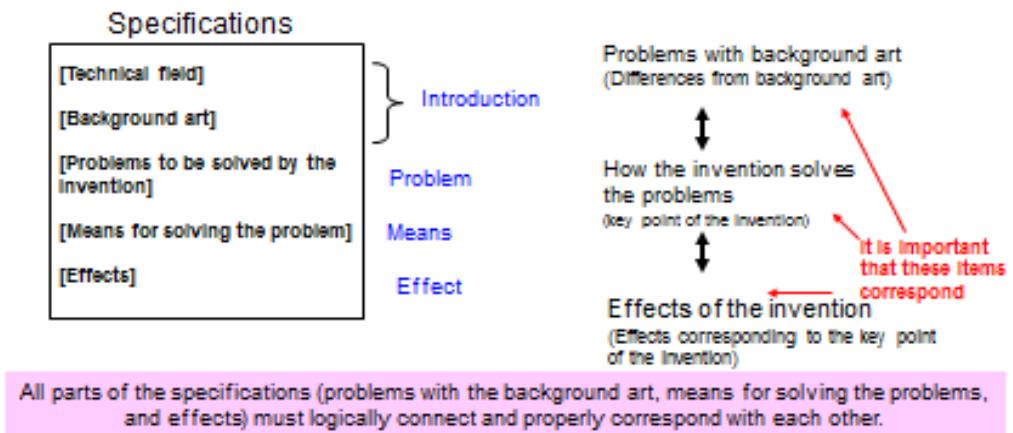
If either of these effects is achieved, then the invention is considered an inventive step.

From the above example, since the invention has an effect of a different nature, i.e., "quick-drying," which cannot be achieved with the Background art Example 1, then it is considered to be an inventive step.

Thus, an invention is considered as an inventive step if it was difficult to create the invention (not easy to make).

### (3) Creating an outline of the Specifications

Create an outline for summarizing the previous points (key point of the invention, differences from background art) in the Specifications.



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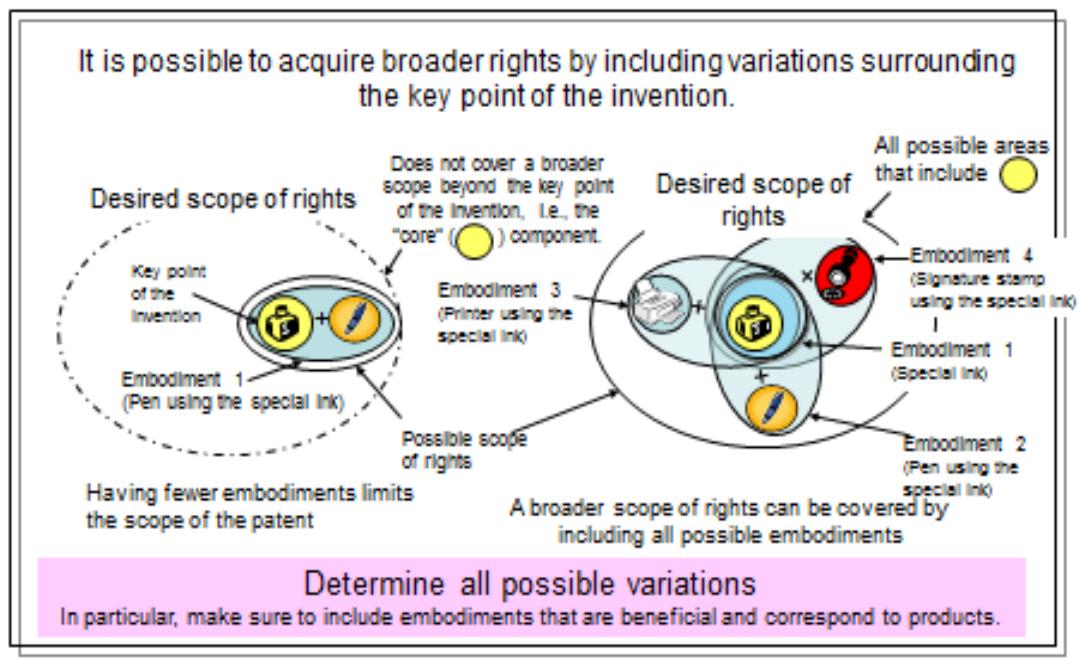
Next, we will create an outline of the specifications based on the points we have determined so far (key point of the invention and differences from background art).

As will be explained later in Chapter 3, the items to be included in the specifications are specified (left of figure above), namely, the technical field into which the invention falls, introduction of the background art, presentation of the problems with the background art, explanation of how the invention solves the problems, and explanation of the effects of the invention.

As a whole, the specification outlines the main points, i.e., the problems with the background art, the means for solving the problems, and the effects of the invention. Thus, these parts need to be logically connected and must properly correspond to each other.

To take an example of ink, in the present invention, the problem of "poor drying property" in the ink composed of materials A and B of the background technology is solved by the constitution "materials A and C", thereby obtaining the effect of "rapid drying properties". As mentioned above, respective correspondences are crucial.

## (4) Determining variations



So far we have learned the processes from identifying the key point of the invention to creating the outline of the specifications. Next, we will determine variations surrounding the key point of the invention. First, we need to think of why we need to determine variations?

For example, if we write one particular embodiment (pen using the special ink), we can obtain the patent for the particular scope defined by the embodiment. However, to obtain broader patent rights, we need to include embodiments from a more comprehensive scope covered by the key point of the invention. We explained in Chapter 1 that a patent right is granted in exchange for public disclosure of the invention; thus, to acquire a patent with a broader scope of rights, we need to include a broader scope of embodiments (variations, namely, for our example, pen, printers, and signatures stamps using the special ink).

As such, we need to make sure to determine and include all possible variations. Moreover, we should particularly choose embodiments whose implementations are beneficial and those that correspond to particular products.

Also, if the "core" component itself represents an embodiment of the invention, this embodiment (Embodiment 1 in the slide) should also be included in order to clarify which is the core component of the invention.

# Methods for coming up with Variations

## Example of variations

- Change of parts, materials and mechanism
- Invention of an object, manufacturing method, using [drive] method and manufacturing equipment
- Study of dimensions and conditions
- Improvement in layout and shape
- Combination between invention configuration and background technologies
- Application to other products

When no variations can be found out:

- Try to change your position.  
If another person has acquired a patent for his invention, what measures will you take in order to avoid infringement of his patent?
- Have discussion with your colleague. Hear the comments of the personnel working in other fields and layers in particular.
- Enumerate the disadvantages of an invention. Find out the way of solving the related problems.

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There can be many examples of variations as stated above. Different variations can be designed by examining whether, in terms of constituting elements, the parts or materials can be replaced by others, or whether an application product based on the invention can be manufactured.

If a variation cannot be imaged, let us consider as follows, for example: Suppose your competitor company has acquired a patent for the invention, what different method do you use in order to avoid infringement of their patent? Further, you may get a new variation through the discussion with a researcher of another layer.

# Methods for coming up with Variations

## ◆Starting point for an invention

- Study of services and products based on user needs

The major point is the customer "Requirements" for services and products.

Example: A high-sensitivity and low-noise image pickup tubes

→ Rear irradiation type image pickup tubes

- Study of services and products making an effective use of technological seeds

The major point is how to employ the user case and user interface.

Example: RFID technology

→ Visitor tracer system in an exhibition or the like

Expand the scope of device technologies to be effectively utilized, and provide added values through "C&C Cloud".

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A starting point for an invention is found in "the study of services and products based on user needs" and "the study of services and products making an effective use of technological seeds".

In the field of digital camera, for example, the starting point for invention is found in the requirement of taking pictures of more beautiful night views in a room. To ensure higher sensitivity and lower noise, a "rear irradiation type" pickup element is utilized.

Further, the major point in the study based on technological seeds is found in the use case and application to user interface.

For example, we study the utilization of the advantages and characteristics of the RFID in the use case and user interface. This can lead to an invention relating to a tracer system capable of analyzing the flow of the visitors through booths and the time of visitors staying in booths.

In this case, try to expand the working scope of device technologies and to provide users with new added values through the "C&C Cloud".

## Determining variations (correspondence table)

- “Problem – Means – Effect” Table

Invention		
Problem	Means to solve the problem	Effect
Problem to be solved by invention	Means for solving the problem	Effects of the Invention
Embodyment 1		
Embodyment 2		
Embodyment 3		
Embodyment 4		

... Based primarily on key point of invention  
... Variations (Enumerate according to priority based on effect, utility, and importance)

Make use of the “Problem – Means – Effect” table to sort out the outline of the specifications.

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You can consider the variations you have come up with by applying them to the “Problem – Means – Effect” table. As shown here, list the effects that are unique to each embodiment by defining the key and peripheral points of the invention.

Embodiments are listed based on their priority in terms of effect, utility, and importance.

After filling this table out, you can use it to write and complete the specifications.

We will explain the procedures for writing the table using concrete examples in Chapter2-2 “Learning through case studies.”

## Chapter 2-2

# Multifacetedness of the invention

Learning goal for this chapter:

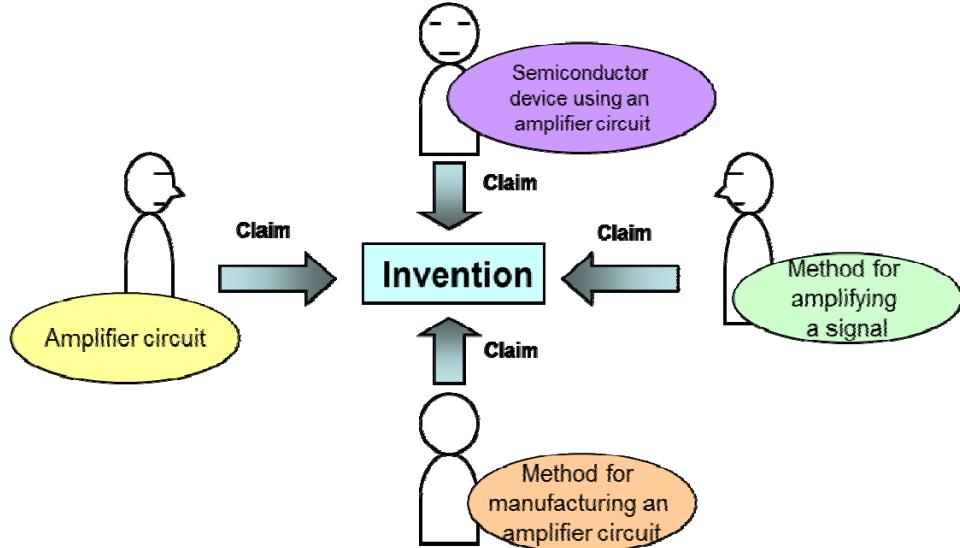
To understand inventions from a multifaceted perspective.

- Multifacetedness of inventions
- Categories of inventions
- Invention of an object and invention of a method
- Invention of a method for producing an object

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## Multifacetedness of inventions

- Multifacetedness of inventions



It is important to look at the invention from a multifaceted perspective.

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To obtain an effective patent, it is important to view an invention from multiple aspects. For example, a subject of amplifier circuit should not be taken merely as an invention. It can be taken as an invention of the semiconductor device using an amplifier circuit, an invention of a method for amplifying a signal or an invention of a method for manufacturing an amplifier circuit.

In the patent law, the scope of claim differs according to the category (type) of invention. Viewing an invention from multiple aspects ensures that the patent right is applicable to all the acts of embodiment by a third party without exception.

## Types of inventions (categories)

- **Product invention**
  - Capture an invention as objective constituent.
- **Process invention**
  - Interpret the invention as time-series components (processing steps)
- **Invention of a method for producing an object**
  - Capture an invention for producing an object in terms of time-series elements (processing steps).

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### What are the categories of inventions?

The patent law provides for the following three invention categories:

- Invention of an object:  
Capture an invention as objective constituent.
- Invention of a method  
Capture an invention in terms of time-series elements (processing step)
- Invention of a method for producing an object  
Capture an invention for producing an object in terms of time-series elements (processing step)

Let us approach invention from the above-mentioned aspects.

## Invention of an object and invention of a method

- When invention can be represented as a specific constituent:
  - Device configuration, circuit configuration, etc.
- When a time-series element is included in invention
  - Device operation, circuit operation, etc.



Invention of an object



Invention of a method

If invention relates to constituents and operations, it can be represented by both categories.

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The following discusses the invention of an object and method:

When invention can be represented as a specific constituent, for example, when it can be represented in terms of a device configuration or circuit configuration, it can be represented as invention of an object.  
When invention includes a time-series element, for example, when it can be represented in terms of device operation or circuit operation, it can be represented as invention of method.

Therefore, if invention can be represented in terms of both constituent and operation, it can be represented as invention of both categories.

## Invention of a method for producing an object

- Capture object-producing invention in terms of time-series elements.
  - Production or manufacturing method of device or equipment



### Invention of a method for producing an object

If invention relates to constituents and their production method, the invention can be represented as invention of both categories.

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The following discusses the invention of a method for producing an object.

Invention of a method for producing an object captures the object-producing method in terms of time-series elements.

When invention can be expressed in terms of production or manufacturing method of device or equipment, it can be represented as invention of a method for producing an object.

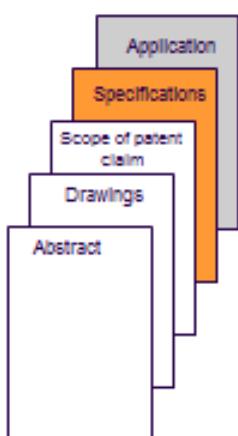
Therefore, if invention relates to constituents and their production method, the invention can be represented as invention of both categories of object and its producing method.

## Chapter 3

### Writing the items in the Specifications

Learning goal for this Chapter:

To understand the method for writing the items of the Specifications



- Structure of the Specifications
- Method for writing the different items
  - Name of the invention
  - Technical field
  - Background art
  - Problem to be solved by the invention
  - Means for solving the problem
  - Advantageous effect of the invention
  - Brief description of the drawings
  - Modes for carrying out the invention
  - Embodiments
  - Explanation of codes

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## Structure of the Specifications

**[Name of document]** Specifications

Direct PCT application example

**[Name of invention]**  
Write the name of the invention.

**[Technical field]**  
Write the technical field into which the invention falls

**[Background art]**  
Write the background art for the invention in a way that clarifies the technical significance of the invention.

**[Overview of invention]**

**[Problem to be solved by the invention]**  
Write the problem with the background art that the invention will solve.

**[Means for solving the problem]**  
Write the means needed for the invention to solve the problem.

**[Advantageous effect of the invention]**  
Write the advantageous effect gained as a result of solving the problem.

**[Brief description of the drawings]**

**[Figure 1] ...**

**[Modes for carrying out the invention]**  
Write in a clear and sufficient manner to enable a person skilled in the art to carry out the invention.  
Write at least one best mode.

Write also "other modes for carrying out the invention."

**[Embodiment 1]**

Write a concrete example of actual implementation of invention.

**[Explanation of codes]**

Explain the main reference numbers used in the codes.

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The items that need to be stated in the Specifications and the order by which they should be stated are defined by the Patent Law. Here we will explain the details of the invention in accordance with these items.

# Name of the invention

- Describe the title of the invention in conformity to its category (invention of an object, invention of a method, or invention of a method for producing an object).

## Format

- (1) Consider the "**target object**" to which the invention is applied.

Example: Semiconductor device

- (2) Describe the **category** of invention before the target (for invention of a method or invention of a method for producing an object)

Example: A method for manufacturing a semiconductor device

There is no need for suffixing the category of the invention if it is included in the target object such as a semiconductor device.

### Notes:

1. A XXX system or a XXX method indicates invention of an object.
2. Do not use a trademark.
3. Do not describe the effects of the invention or object of the invention.

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In the section of [The name of the invention], the title of the invention is described in conformity to the category of invention.

Consider the target object covered by the invention and suffix the invention category.

In the example of a "semiconductor device", for example, the target object is a "semiconductor device". Since the "device" in the suffix indicates the category of an object, there is no need for addition.

The category of invention is described before the target object, such as "A method for forming ..." or "A method for driving ..." in the case of invention of a method, or "A method for manufacturing ..." in the case of invention of a method for producing an object.

What should be noted in this case is this: When you want to express the target object, do not use a trademark or the wording representing the effects of the invention or object of the invention such as "state-of-the-art". Further, you must not use such wording as "semiconductor characterized by improved operation speed" that suggests the effects of the invention or object of the invention.

## Technical Field

- Describe the technical field briefly

### Format

The present invention relates to [Title of Invention], particularly to [**some specification**] plus [Title of Invention].

The [**some specification**] in the above description is a technological gloss characteristically representing the major points of invention.

Example: pressure-resistant....

You may consider the object of the invention or target object.

### (Example)

### [Technical Field]

The present invention relates to a semiconductor device and a method for manufacturing the same, particularly to a semiconductor device characterized by improved heat radiation effect and a method for manufacturing the same.

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In the section of [Technical Field], describe the field of invention covering the invention for which you want to obtain a patent.

To put it more specifically, describe as follows:

"The present invention relates to [Title of Invention], particularly to [some specification] plus [Title of Invention].

Here describe the title of the invention in some details, and briefly describe the field of the invention. For example:

"The present invention relates to a semiconductor device and a method for manufacturing the same, in particular, a semiconductor device characterized by improved heat radiation effect and a method for manufacturing the same."

## Background art (1)

- Explain the background art that serves as the starting point of the invention.

Format

In semiconductor devices currently in common use, XXX.

[PTL 1] Japanese Unexamined Patent Application Publication No. 2009- xxxx

[NPL 1] TANAKA, "Recent Trend of Semiconductor Mounting Technique", [online], April 1, 2007, abc GIKEN [Searched on April 1, 2006]

Internet <URL: <http://www.abc.co.jp/index.htm>>

- Explain the overview to focus on the problems with the background art using results of voluntary search and known articles regarding the most closely related background art.
- At the end of the explanation, add [Patent documents] or [Non-patent documents] and list examples of patent bulletins, articles, and other sources.
- Use publicly known documents as basis for explanation.

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In the “background art” section, write the background art of the invention for which the patent is being applied for in a way that clarifies that technical significance of the invention.

Use your own search results and personally known articles of the most closely related invention to explain the background art. And, explain the overview to focus on the problems with the background art.

Be careful in referring to patents you have previously applied for or patents of the company to explain problems of background art, since you may be questioned for product liability (PL) later.

Use the following format in writing the background art:

[The “name of the invention” is carried out as described in the “technology explanation.” An example of this “name of the invention” is listed in “patent documents.”]

In the “technology explanation,” include concrete explanations using drawings.

Since drawings usually provide a clearer presentation of the differences of your invention from the background art, make sure to use them in the explanations.

Do not, however, write technologies that are not publicly known as background art. Make sure to use publicly known technologies and publicly known documents in the explanation in order to avoid an unfavorably strict judgment of novelty and innovativeness of your invention.

## Background art (2)

- Format for identifying your sources
  - For citing public bulletins or patent bulletins, use:  
“Patent document 1, Patent document 2, ...”
  - For citing journals and other published articles, use:  
“Non-patent document 1, Non-patent document 2, ...”
  - For citing web pages on the Internet:  
“Non-patent document 1, Non-patent document 2, ...”  
→ Keep a printout of the cited web pages.
  - For citing sources other than the above,  
Cite the most recent publicly known technology  
ex. Word (Registered trademark: Microsoft)

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Regarding the format for identifying your sources, include the publication number, e.g. “Patent Bulletin No. 2005-123456,” when citing public bulletins.

When citing journal articles for the background art, include, in the following order the author, title of article, name of journal, country of publication, publisher, date of publication, volume, issue, and page numbers.

Further, you can specify sources other than patent documents or research paper. It should be noted that, when you want to describe the background technology of other companies, the product name may have been registered as a trade name. In this case, be sure to specify that the trademark is registered.

## Problem to be solved by the invention

- Explain the problem with the background art and the purpose of the invention stemming from the problem

### – Problem with the background art

Also explain the reason leading to the problem:

**Format** [A problem, namely \_\_\_\_\_, exist in the above-mentioned "background art" due to \_\_\_\_\_.]

### – Purpose of invention

Explain the purpose of the invention stemming from the problem:

**Format** [The purpose of this invention is to offer "name of the invention" as a solution to solve the above problem, namely, \_\_\_\_\_.]

\*Narrow down to the problem to be solved by the key point of the invention.

Opposite side of the problem

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In the “problem to be solved by the invention” section, state the problem with the background art and the purpose of the invention stemming from the problem.

Since this part helps in putting focus on the excellent point of the invention in solving the problems with background art, write as concretely as possible.

Also, only include problems of the background art that can be solved by the key point of the invention. Since solutions to the problems are interpreted as the invention, it would not be appropriate to enumarate too many problems.

## Means for solving the problem

- Briefly describe the means and effect (essence of the invention) for solving problems.
  - Describe **the minimum constituents**
    - Describe the invention in terms of the **minimum constituents (major points of the invention)** to solve problems.
  - Describe **the effect**
    - Describe how the **minimum constituents work to produce the effect of the invention**.

\* The description on effect will be transcribed to the [Modes for carrying out the invention] by the patent office or the department of intellectual property right.

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In the section of [Means for solving the problem], briefly describe the means and effect (essence of the invention) for solving problems.

In this item, describe the invention in terms of the minimum constituents (major points of the invention) to solve problems.

Then describe the effect. The effect denotes working of the constituent elements producing the effect of the invention.

Explain how constituent elements work to produce the effects not found in the background art,

It should be noted, however, that the description on effect will be transcribed to the [Description of Embodiments] by the patent office or the department of intellectual property right.

## Advantageous effect of the invention

- Explain the unique technical advantage of the invention.

### Format

[Advantageous effect of the invention]

The advantageous effect of the invention lies in its ability to \_\_\_\_\_.

Addresses the "problem to be solved by the invention"

- If the invention has several advantages, write only the effect that addresses the problem stated in "problem to be solved by the invention."
- Write other advantageous effects in "modes for carrying out the invention." Do not write the reason why the invention provides the advantageous effect in this section.
- The reasons and causal relationships with the structure and mechanism of the invention are written in "modes for carrying out the invention."

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The "advantageous effect of the invention" section explains the effect that is true for the invention as a whole (for all modes of carrying out). In other words, write the effect achieved through the key point of the invention.

Write the "advantageous effect of the invention" in such a way that it corresponds to what is written in the "problem to be solved by the invention," i.e., make sure that it is the effect that is gained by solving the problem.

Since the effect written in the "advantageous effect of the invention" could lead to a limited interpretation of the invention, avoid writing beyond what is necessary. Keep the following points in mind:

- (1) If the invention has several advantages, write only the effect that addresses the problem stated in the "problem to be solved by the invention."
- (2) Do not write other advantageous effects (effects specific to each mode) here but in the "modes for carrying out the invention" where the effects are written with their corresponding modes.
- (3) Do not write the reason why the invention provides the advantageous effects in this section, but in the "mode for carrying out the invention," where the reasons and causal relationships with the structure and mechanism of the invention are written for each mode.

## Brief description of the drawings

- Briefly explain the the drawings used in the background art, modes for carrying out the invention, and other sections.

### Format

[Brief description of the drawings]

[Figure 1] Figure 1 is a cross sectional view representing the semiconductor device as a first example of the present invention; and

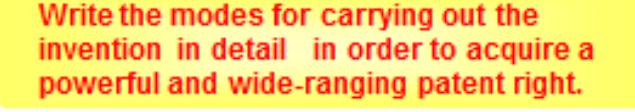
[Figure 2] Figure 2 is a cross sectional view representing the semiconductor device as a second example of the present invention

:

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In the “brief description of the drawings,” give an explanation of each drawing used in the explanations in the Specifications.

## Modes for carrying out the invention

- This is the most important item of the Specifications:
    - Reason 1: A patent is granted in exchange for public disclosure of a new technology.
    - Reason 2: Corrections and additions to the modes for carrying out the invention are practically impossible after the application has been filed.
    - Reason 3: It is possible to revise the scope of the patent claim based on the modes for carrying out the invention when responding to reasons for rejection.
-   
Patent rights cannot be granted  
for undisclosed items
-   
Write the modes for carrying out the  
invention in detail in order to acquire a  
powerful and wide-ranging patent right.

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The “modes for carrying out the invention” section is the most important part of the Specifications.

Reason 1: It is difficult to acquire patent rights for items not disclosed during the filing of the application. Writing concrete details of the invention in the “modes for carrying out the invention” ensures the acquisition of the appropriate patent rights scope.

Reason 2: Corrections and additions to the “modes for carrying out the invention” section are practically impossible after the application has been filed.

Reason 3: It is possible to revise the scope of the patent claim based on the “modes for carrying out the invention” when responding to reasons for rejection.

In order to acquire a powerful and broad-ranging patent right, write the modes for carrying out the invention in sufficient detail.

## How much details should be included?

- Legal aspect:

Write in a manner that a person skilled in the art can implement the invention by reading the modes for carrying out the invention.

- Person skilled in the art:

A person who possesses ordinary skill in the technical field into which the invention falls

- In other words:

Write in sufficient detail so that a person with a general knowledge level in the field can easily understand and implement the invention

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With regard to how much details should be included, the Patent Law stipulates that the “modes for carrying out the invention” should be written in such a way that a person skilled in the art can implement the invention.

A person skilled in the art is defined as “a person who possesses the ordinary skill in the technical field into which the invention falls.”

Thus, the detailed explanation of the invention should be written in sufficient detail to be easily understood by a person with the usual knowledge in the technical field of the invention.

In other words, the explanation should be written in such a way that any person with a general knowledge level in the field can easily understand and implement the invention.

## Modes for carrying out the invention

[Modes for carrying out the invention]

**[1st mode]**

Write the mode consisting only of the key point of the invention (minimum component element)

**[2nd mode]**

Write a variation of the mode for carrying out the invention.

•  
•

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For the first mode for carrying out the invention, write the mode consisting only of the key point of the invention (minimum component element). This is to show that the invention can solve the problem and provide the advantageous effect only with the key point of the invention.

For the succeeding modes, write variations to the primary mode for carrying out the invention.

## Structure of the modes for carrying out the invention

[Modes for carrying out the invention]

[1st mode]

[Explanation of structure]

[Explanation of mechanism]

[Explanation of effect]

[Explanation of method for Manufacture]

:

[nth mode]

**Explain in detail using drawings.**

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In the modes for carrying out the invention, write down a few modes and explain each mode in detail.

Generally, explanation is made by explaining the structure, followed by the mechanism, and the effect, and method for Manufacture.

Explain the structure, mechanism, and effect in detail by using drawings, and method for Manufacture.

In explaining the “structure,” use general drawings to show the overall structure and enlarged drawings to show enlarged views of the characteristic parts.

In explaining the “mechanism,” use timing diagram or signal diagram, sequence diagrams to explain the mechanism in detail.

In explaining the “effect,” write down the unique effects for each mode.

In the [Method for Manufacture], explain each process sequentially in details using a drawing cross sectional view.

## Explanation of structure

- (1) Use a drawing to explain the overall structure of the invention.
- (2) Explain the detailed structure of the main parts.
- (3) Explain the functions of each component element (components) in terms of their relationship:  
Connection: How are the parts located and connected?  
Interaction: How do the parts operate in relation to each other?  
Order: In what order do parts operate?
- (4) Explain the effects unique to each mode

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In explaining the structure, prepare and use diagrams (block diagram) to show and explain the structure of the invention.

As to the format, first, explain the overall structure of the mode, and then explain the detailed functions of the main components.

The explanations should include the relationship of the components in terms of how they are located and connected, how they interact with each other, and in what order they operate. In terms of connection, it would be better include input-output connections between connected components.

Finally, explain the unique effects of each mode by including an explanation of the causal relationships with the structure of the invention. Include a brief explanation of the operation (reason for achieving effect of the component element) if possible.

## Explanation of mechanism

- Describe the operation of the invention.  
→ Explain each item sequentially in details using the drawings showing **the operation of the invention, timing diagram, waveform signal diagram, flowchart, etc.**

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In the description of operation, explain how the invention operates. To put it more specifically, explain the operations sequentially in details using the drawing showing the operation of the invention, as well as a timing diagram, waveform signal diagram, flowchart and others.

## Explanation of effect

- Explain the effect achieved through the key point of the invention (minimum component element) together with the causal relationships with the structure and mechanism.
- Explain the unique effects of each mode, including the causal relationship with the structure and mechanism, for each mode for carrying out the invention.

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In explaining the effect of the different modes of carrying out the invention, explain the effect achieved through the key point of the invention (minimum component element) together with the causal relationships with the structure and mechanism.

Also, explain the unique effects of each mode, including the causal relationship with the structure and mechanism, for each mode of carrying out the invention.

It is possible to claim that the invention is patentable based on these descriptions of effects in case a notice of reasons for rejection is received.

Thus, make sure to write any unique effect for each mode for carrying out the invention.

## Description of the method for manufacture

- Explain the method for manufacture using drawings.
  - Normally, use a cross sectional view to describe the method for manufacture in the **order of manufacturing processes**.
- If you have made some improvement in the manufacturing equipment, describe the method for manufacture using the drawing showing the manufacturing equipment.

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In the description of the manufacturing method, create a drawing showing the method for manufacturing the invention. Use this drawing in your explanation.

Normally, create cross sectional views in the order of manufacturing processes and give explanation sequentially.

If you have made some improvement in the manufacturing equipment in the process of manufacturing, create the drawing showing the manufacturing equipment. Describe the manufacturing equipment using this drawing showing. Your improvement should be carefully explained.

## Other modes for carrying out the invention

Other modes for carrying out the invention

[Modes for carrying out the invention]

[1st mode]

[Explanation of structure]

[Explanation of mechanism]

[Explanation of effect]

[Explanation of method for Manufacture]

:

[nth mode]

[Explanation of structure]

[Explanation of mechanism]

[Explanation of effect]

[Explanation of method for Manufacture]

For 1st mode A+B use the following examples:

- Substitution of component element

A+B'

- Modification by addition of other component elements

A+B+C

- Application of 1st mode:

ex. Device using A, B ..

**Write all conceivable modes.**

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Next, we will learn about the other modes for carrying out the invention.

Other modes for carrying out the invention can be derived by substituting the component elements of the primary mode, adding other components, or modifying the primary mode.

For example, if the component elements of the primary mode is A + B, B can be replaced by a component similar to B, such as B', or by adding a new component C to the A + B structure.

Try to include all other possible modes you can think of.

## Format for writing other modes

- Explain the difference from the first mode

$$\begin{array}{ll} A + B & \rightarrow A + B' \\ A + B & \rightarrow A + B + C \end{array}$$

← Explain only  
the  
difference

- If this mode has unique effects, [write them here](#), not in the "advantageous effects of the invention" section

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In the “other modes for carrying out the invention,” clarify the characteristic components by briefly explaining only the differences from the mode already explained earlier and avoiding explanations of overlapping components. Also, indicate unique effects of the mode if there are any. And, try to include all other possible modes you can think of.

## For further improvement of embodiments

To get a wider scope of patent right, further improvement of embodiments is essential.

In the embodiment, be sure to describe the **alternative art or numerical scope**

Describe the <alternative art>.

[Structure]: Modification of length, film thickness, concentration, material, shape, layout, etc.

[Operation]: Speed, time or changes accompanied by modification of [Structure]

[Method for manufacturing]:

Changes in conditions (temperature, concentration, pressure and time) and method for manufacturing

\* If there are two or more alternative arts which can be represented in a generic term, describe the generic term. Then **describe all specific examples**. After that, describe a **particularly preferable example** among them. Show the reason why it is **particularly preferable**.

Example: A conductive metal is preferable as a material for part A. To put it more specifically, **copper, aluminum and iron** can be mentioned, because they also provide the advantages of electromagnetic shielding effects.

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To get a wider scope of patent right, improvement of embodiments is essential.

For this purpose, description of the alternative art or numerical scope is indispensable in the embodiment.

<Alternative art>

Write down [structure], [operation] and [method for manufacture] of one embodiment and consider the points that can be modified.

[Structure]: Modification of length, film thickness, concentration, material, shape, layout, etc.

[Operation]: Speed, time or changes involving modification of [Structure]

[Method for manufacturing]: Changes in conditions (temperature, concentration, pressure and time) and method for manufacturing

\* If there are two or more alternative arts which can be represented in a generic term, describe the generic term. Then describe all specific examples that can be imaged.

After that, describe a particularly preferable example among them. Show the reason why it is particularly preferable.

If specific advantages can be obtained for each alternative art, describe the embodiment separately for each alternative art, and explain the specific advantages of each embodiment.

If specific advantages cannot be obtained for each alternative art, you may describe them collectively in one embodiment.

## For further improvement of embodiments

Describe the <numerical scope>.

[Structure]: Numerical scope for length, film thickness, concentration, etc.

[Operation]: Numerical scope for speed, time, voltage, etc.

[Method for manufacturing]:

Numerical scope for temperature, concentration, pressure, time, etc.]

\* Numerical setting (adjustment) indicates the upper and lower limits for improvement of effects. Also describe the reasons for the upper and lower limits.

Describe a particularly effective value within the numerical scope if there is any.

Example:

"Set the thickness of the insulation layer at 5 µm or more without exceeding 100 µm, preferably in particular at 30 µm or more without exceeding 70 µm. This is because connection reliability is considerably enhanced within this scope, as can be seen from characteristic diagram 2."

The advantages of the numerical scope can be understood more effectively if your explanation is accompanied by charts. If you have a test result, explain the test method.

<Numerical scope>

In the embodiments you have written down, consider the items requiring setting (adjustment) of numerical scope.

[Structure]: Numerical scope for length, film thickness, concentration, etc.

[Operation]: Numerical scope for speed, time, voltage, etc.

[Method for manufacturing]:

Numerical scope for temperature, concentration, pressure, time, etc.]

In the adjustment (setting) of numerical values, indicate the upper and lower values that provide good effects.

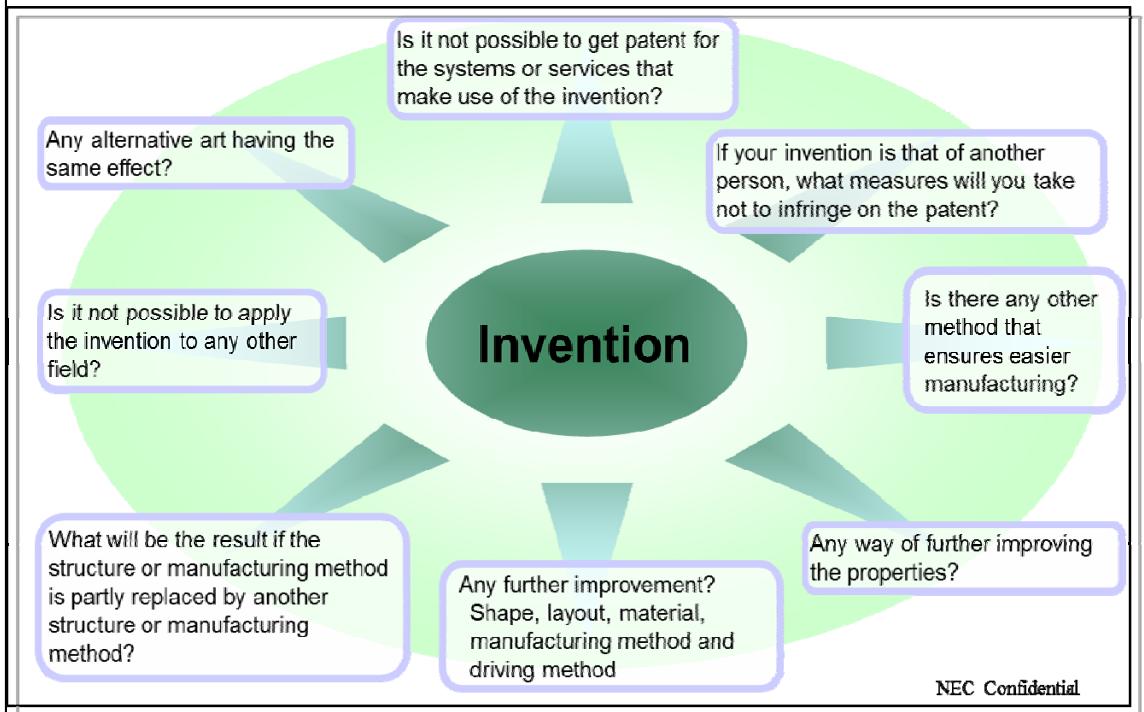
Also give the reasons why these upper and lower values are limits.

Describe a particularly effective value in the scope (or in a more restricted scope), if there is any.

\*The advantages can be understood more effectively if your explanation is accompanied by charts.

If you have a test result, explain the test method.

## How to expand the invention



We have given suggestions on how to improve the embodiment. You can refer to this diagram which shows how to expand your idea. Further, discussion with personnel working in different fields may give you unexpectedly good idea. Further, you may reach an embodiment of other form through further improvement by your efforts in different directions, study of other effects and enhancement of other characteristics. By making reference to these suggestions, study other embodiments and expand your invention.

# Embodiment

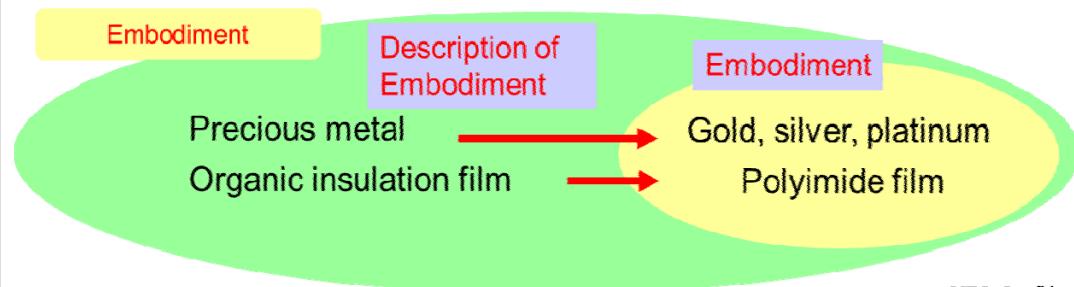
- [Embodiment]

Describe the specific examples (test result, simulation result, etc.) you have actually implemented.

- Difference between [Description of Embodiments] and [Embodiment]

## DESCRIPTION OF EMBODIMENTS

... Explanation of an invention in terms of concepts using the terms having a certain extension and numerical values



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In the section of [Embodiment], describe the specific examples (test result, simulation result, etc.) you have actually implemented.

If there is a specific example you have actually performed, describe it in the [Working Example].

For example, whereas a broader concept such as "precious metal" is described in the [Description of Embodiments], specific examples such as "gold", "silver" or "platinum" which have been specifically implemented are described in the [Embodiment].

## Explanation of codes

- Explain the main reference numbers used in the drawings.

Format

### [Explanation of codes]

- 1 Interposer
- 2 Semiconductor chip

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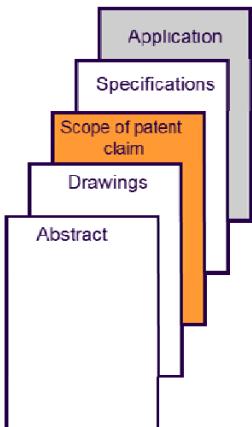
- In the explanation of codes, write an explanation of each code used in the drawings.

## Chapter 4

# How to write the Scope of patent claim

Learning goal for this chapter:

To understand the procedure for writing the  
Scope of patent claim



- Procedure for writing the Scope of patent claim
- Independent and dependent claims
- Writing multiple claims
- Format for writing claims
- Procedure for writing claims
- Pointers in writing broad patent rights

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## Procedure for writing the Scope of patent claim

- Briefly and clearly describe all the items considered necessary in specifying the invention being patented.
  - Describe the essential component elements needed in achieving the purpose of the invention.
  - Clarify the relationship between the component elements.
- Classify invention according to claims.

[Document name] Scope of patent claim  
[Claim 1] ...  
[Claim 2] ...

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In the scope of patent claims, you need to clearly and concisely write all the items considered necessary in identifying the invention being patented.

Further, the invention being patented must also be written according to the classification of the patent claims.

You can write more than one claim as shown in the slide:  
[Claim 1], [Claim 2], [Claim 3] ...

## Independent and dependent claims

- **Independent form claim (independent claim)**

**Claims that do not cite other claims**

Ex. [Claim 1]

"Chair equipped with legs and seat attached to one set of the aforementioned legs"

- **Dependent form claim (dependent claim)**

**Claims that cite other claims**

Claims can be briefly described by avoiding overlapping statements.

Ex. [Claim 2]

Chair described in Claim 1, which is further equipped with a backrest attached to a part of the aforementioned seat.

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There are two formats for writing claims, namely, the independent form claim (independent claim), which does not cite other claims, and the dependent form claim (dependent claim), which cites other claims.

Writing dependent claims enables avoiding repetitions of descriptions as well as clearly describing differences from the claim being cited.

# Writing multiple claims

## Describe a plurality of claims.

- Out of the claims covering all the embodiments and working examples, create a hierarchical claims corresponding to working examples.
- Create claims on not only the structure and object but also the product using the object and the method for manufacturing.

Invention → Claim 1 : Independent claim

1st mode → Claim 2

2nd mode → Claim 3

Claim 4

Claim 5

3rd mode

4th mode

5th mode

Claim 6

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A broad patent claim has the potential to bring about a broad patent right. At the same time, however, the broader the claim, the higher the possibility of including a background art, leading to the risk of failure to acquire the patent. To address this problem, write a hierarchy of claims that include wide patent claims to narrow claims that are narrowed down to each mode or, in some cases, narrowed down to particular modes of carrying out the invention.

For example, you can write a broad independent claim that covers all the modes (Claim 1).

Further, claims in a narrower sense corresponding to the first embodiment and second embodiment are assumed as claims 2 and 3, whereas claims in a still narrower sense corresponding to the specific working examples are assumed as claims 4, 5 and 6.

The invention can be protected from multiple aspects by describing claims on not only the structure and object but also the product using the object and the method for manufacturing.

## Format for writing claims

- ① Separate the premise and the features, or
- ② List the claims without separating into premise and features

- ① Separate premise and features part

E.g. For \_\_\_\_\_, \*\*\*\*\* device equipped with \_\_\_A, \_\_\_B, and \_\_\_C

{  
    Premise                          Features  
}

- ② List without separating into premise and features

E.g. \*\*\*\*\* device equipped with

\_\_\_A,  
\_\_\_B,  
and \_\_\_C

Recommended

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Claims can be written by separating the premise and features, or by listing without dividing the premise and features. In overseas patent examinations, there is a risk of having the premise part interpreted as background art. Hence, mistakenly writing the features of the invention in the premise part could lead to a higher standard for inventiveness during patent examination. Because of this, listing the claims without separating into premise and features is the recommended format at NEC. In the next slide we will explain how to write claims without separating into premise and features.

# How to describe claims

- **Descriptions of constituent elements and operations (functions)**
  - Description of constituent elements
    - Example: "foamed polyurethane or cork-formed connections and ..."
  - Description of operations (functions)
    - Example: "connections made of heat insulating members and ..."
- **Create claims by studying both the description of constituent elements and description of operations (functions).**
  - Since the description of operations (functions) may be interpreted in the sense restricted to embodiments and working examples in some cases, describe the embodiments and working examples in a great number of variations.

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The description of claims consists of the description of constituent elements and description of operations (functions).

In the description of constituent elements, the constituent elements of the invention such as foamed polyurethane and cork are directly described.

In the description of operations (functions), description is given in terms of operations (functions) such as heat insulating member.

In the description of constituent elements, the scope of claims is restricted to foamed polyurethane or cork according the above example. However, the scope of claim is definite and claims will not be rejected easily in the phase of examination.

In the description of operations (functions), however, even if the scope of claims covers other than foamed polyurethane and cork, all means having heat insulation function are included, in the above example. Accordingly, the scope of claims can be extended over that in the description of constituent elements. However, the scope of claims may be considered to be too extensive, and will be more likely to be rejected in the phase of examination.

Further, in the description of operations (functions), the constituent element for implementing the function may be interpreted as being restricted to the embodiment and working example. This does not expand the scope of claims.

Accordingly, in the description of operations (functions), it is important to describe the embodiments and working examples in multifaceted variations.

For the above-mentioned ground, the description of operations (functions) alone should be avoided. Every effort should be made to include the description of constituent elements for claims.

## Pointers for writing broad patent claims

- **Can the claim be written using generic concept terminology?**  
Ex. For Oxide film or nitride film → insulation film
- **Can you use operational expressions?**
- **Is it written using only the minimum component element for achieving the purpose?**
- **Can you create Claims in terms of “structure” and “method”?**
  - Example of claim for method: method for manufacturing an object, method for control, method for use, etc.
- **Does the claim use unnecessary limitations?**  
Ex. In the case of a chair:  
Legs and a seat would be enough; there is no need to mention the number of legs or to add a backrest.

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The following discusses how to expand the scope of claims in your description:

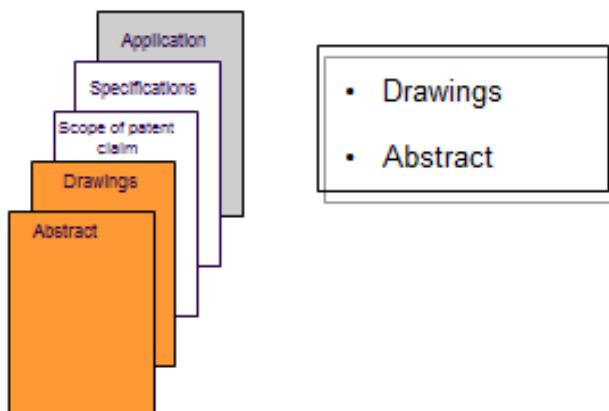
- Use the broadest possible concept.  
If the constituent element is "oxide film" or "nitrated film", write "insulation film" which has a broader concept.
- Description of operations (functions) is also effective.  
For example, use an operational or functional term such as "making the surface flat" instead of a specific term such as "polishing the surface" or "polishing" or "coating". In this case, however, as discussed in "How to describe claims", it is important to improve the embodiment and working example, and to provide description of constituent elements separately.
- Create the claims for structure (object) and method, and write claims from a different viewpoint. For example, the claim for method includes a method for manufacturing an object, method for control and method for use.
- Do not give an unnecessary or unwanted description that is not required to specify the invention.  
For example, when you have intended a chair, description of feet and a seat of the chair is sufficient to show the movement of the chair. You need not write three or four feet, thereby restricting the number of feet. The back of the chair need not be mentioned. Without them, a chair performs its function. Do not include such an unwanted description.

## Chapter 5

### How to write the Drawings and the Abstract

Learning goal for this chapter:

To understand the procedure for writing the Drawings and the Abstract



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# Drawings

- Drawing required for an invention of devices

- Drawing showing the construction of invention

- Schematic diagram for apparatus
    - Cross sectional view for device

- Drawing showing the properties of the device, apparatus and material

- Chart showing the properties

- Drawing showing the operation of invention

- Timing diagram
    - Waveform signal diagram

- Drawing showing the method for manufacturing

- Diagram illustrating the temporal flow of the process
    - Drawing of device and apparatus for each process

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The following shows how to describe drawings:

The invention of a device requires a schematic diagram of the equipment representing the structure of invention, a cross sectional view of the device, a chart showing the device characteristics and equipment characteristics, a timing diagram representing the operation of the invention, a waveform signal diagram, a diagram showing the manufacturing processes and the structure of the device or equipment obtained for each manufacturing process, and others.

## Points to remember in writing drawings

- Elements corresponding to the component elements described in the claims must be written in the drawings.
  - For product inventions, write each component element mentioned in the claims in the drawings.
  - For process inventions, write each step mentioned in the claims in the drawings.
- Also prepare a drawing that describes only the essential element of the invention.

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Take note of the following in writing drawings:

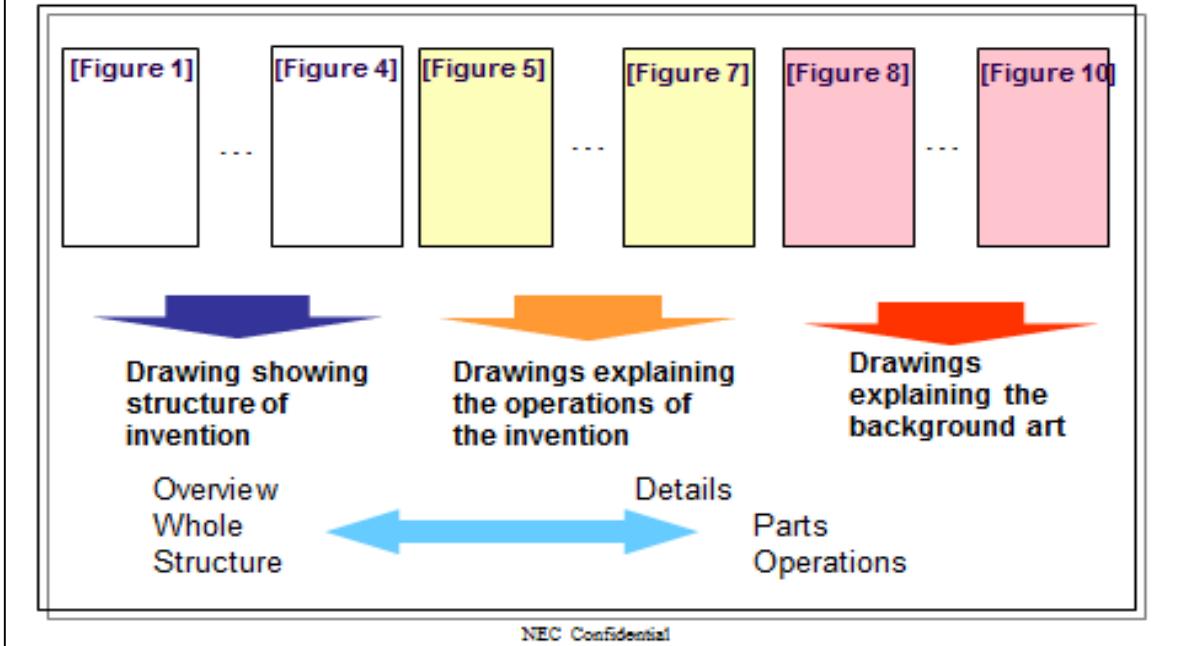
Make sure to write the elements corresponding to the component elements mentioned in the claims in the drawings. This is specially required in overseas patent examinations (particularly the U.S.).

For product inventions, write each component element mentioned in the claims in the drawings.

For process inventions, write each step mentioned in the claims in the drawings.

Also, prepare a drawing that describes only the essential element of the invention. Refer to this drawing in explaining that the operations and effects can be exhibited to solve the problem, even only with the essential components of the invention.

## Arrangement of drawings



Use the drawing showing the structure of the invention as Figure 1 and add the drawing for explaining the background art as the last Figure.

Arranging drawings starting from those showing the overview of the invention to those showing details would make it easier to explain the modes for carrying out the invention.

## Using photos as drawings

- For such an object as a crystal structure, metallographic structure, fiber shape and particle structure where drawing is difficult, using a micrograph or radiograph as a drawing is allowed.

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When you find it difficult to draw a picture of a crystal structure, metallographic structure, fiber shape and particle structure, for example, using a micrograph or radiograph as a drawing is allowed.

# Abstract

**[Document name]** Abstract

**[Problem]**

Problem to be solved by the invention

**[Means]**

Means for solving the problem

**[Selected figure]**

Representative drawing

◆ Divide into [Problem], [Means], and [Selected figure] and add headings to each section

◆ Refer to and indicate codes in the representative drawing

◆ Limit to 40 to 160 words

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The Abstract is comprised of the “Problem,” “Means for solving the problem,” and “Selected figures.” Explain the problem and means for solving the problem using representative drawings to explain the invention.

In the “Problem,” write the problem you wrote in the “Problem to be solved by the invention” of the Specifications.

In the “Means,” write the minimum component element (key point of the invention) you wrote in the “Means for solving the problem” of the Specifications and refer to the codes in the selected figures. Limit the explanation to 40 to 160 words.

In the “Selected figure,” show the representative drawing for the invention. For the case of the arrangement of drawings mentioned earlier, this would be Figure 1.

- Divide into [Problem], [Means], and [Selected figures] and add headings to each section
- Refer to and indicate codes in the selected drawings
- Limit to 40 to 160 words

# END

- Seeds for inventions are hidden within your research activities. Learning and understanding how **to recognize and interpret inventions** will enable you to instinctively see those hidden seeds.
- Be more active in pursuing patent applications, for that is the first step in contributing to NEC's business through your research outcomes.



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