

Note: When any ambiguity of interpretation is found in this provisional translation, the Japanese text shall prevail.

## Section 2 Inventive Step

### 1. Overview

Article 29(2) provides that a patent shall not be granted for an invention (an invention lacking an inventive step) where a person ordinarily skilled in the art of the invention (hereinafter referred to as "a person skilled in the art" in this Part) would have been easily able to make the invention based on the prior art.

That is because granting patent rights for inventions which a person skilled in the art would have been easily able to make does not promote the progress of the technology but rather prevents it.

This Section describes the determination of an inventive step for an invention for which a patent is sought, that is, how to determine whether a person skilled in the art would have been easily able to make the invention.

### 2. Basic Idea of Determination of Inventive Step

Inventions subject to determination of an inventive step are claimed inventions.

The examiner determines whether the claimed invention involves an inventive step by considering whether or not it could be reasoned that a person skilled in the art easily arrives at the claimed invention based on the prior art.

Whether or not a person skilled in the art easily arrives at the claimed invention should be determined by assessing comprehensively various facts in support of the existence or non-existence of an inventive step. The examiner attempts the reasoning by assessing these facts legally.

In this Part, "a person skilled in the art" means a hypothetical person who meets all the following conditions (i) to (iv). In some cases, it is appropriate to consider a person skilled in the art to be a "team of experts" in several technical fields rather than an individual person.

- (i) A person who has the common general knowledge (Note 1) in the technical field of the claimed invention at the time of filing.
- (ii) A person who is able to use ordinary technical means for research and development (including document analysis, experiment, technical analysis,

manufacture, etc.).

- (iii) A person who is able to exercise ordinary creativity in selecting materials and modifying designs.
- (iv) A person who is able to comprehend all the matter in the state of the art (Note 2) in the technical field of the claimed invention at the time of filing, and comprehend all technical matters in the field relevant to problems to be solved by the invention.

The examiner should precisely understand the state of the art in technical field of the claimed invention at the time of filing in attempting the reasoning. The examiner attempts the reasoning by certainly considering what would be done by a person skilled in the art who does not have the knowledge for the claimed invention at the time of filing but comprehends all the matter in the state of the art.

(Note 1) "Common general knowledge" refers to matter clear from technique generally known to a person skilled in the art (including well-known art and commonly used art) or empirical rules. Therefore, the common general knowledge includes methods of experimentation, analysis and manufacture; theories of a technology, etc., as far as they are generally known to a person skilled in the art. Whether a certain technical matter is generally known to a person skilled in the art should be determined based upon not only how many documents show the technical matter but also how much attention has been given to the technical matter by such a person.

"Well-known art" refers to technical matter generally known in the relevant technical field. For example, it includes the following items.

- (i) Technical matter which is shown in many prior art documents (see 3.1.1 in "Section 3 Procedure of Determining Novelty and Inventive Step") or webpages (see 3.1.2 in "Section 3 Procedure of Determining Novelty and Inventive Step") etc. (hereinafter referred to as "prior art documents, etc." in this Chapter)
- (ii) Technical matter which is widely known throughout the industry
- (iii) Technical matter which is well-known to the extent that it is needless to present examples

"Commonly used art" refers to well-known art which is used widely.

(Note 2) "State of the art" includes not only the prior art but also common general knowledge and other technical knowledge (technical findings etc.).

3. Detail of Determination of Inventive Step
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**The examiner selects the prior art most suitable for the reasoning (hereinafter referred to as "the primary prior art" in this Chapter), and determine whether it is possible to reason that a person skilled in the art would easily arrive at the claimed invention from the primary prior art by following the steps (1) to (4). The examiner should not regard the combination of two or more independent pieces of prior art as the primary prior art.**

Where there are two or more claims, the examiner should determine the existence of an inventive step for each claim.

**(1) The examiner determines whether or not the reasoning is possible based on the various factors in support of the non-existence of an inventive step (see 3.1) for the differences between the claimed invention and the primary prior art by adopting other pieces of prior art (hereinafter referred to as "secondary prior art" in this Chapter) or considering the common general knowledge.**

**(2) If the examiner determines that the reasoning is impossible based on the above step (1), the examiner determines that the claimed invention involves an inventive step.**

**(3) If the examiner determines that the reasoning is possible based on the above step (1), the examiner determines whether the reasoning is possible by comprehensively assessing various factors which includes factors in support of the existence of an inventive step (see 3.2).**

**(4) If the examiner determines that the reasoning is impossible based on the above step (3), the examiner determines that the claimed invention involves an inventive step.**

**If the examiner determines that the reasoning is possible based on the above step (3), the examiner determines that the claimed invention does not involve an inventive step.**

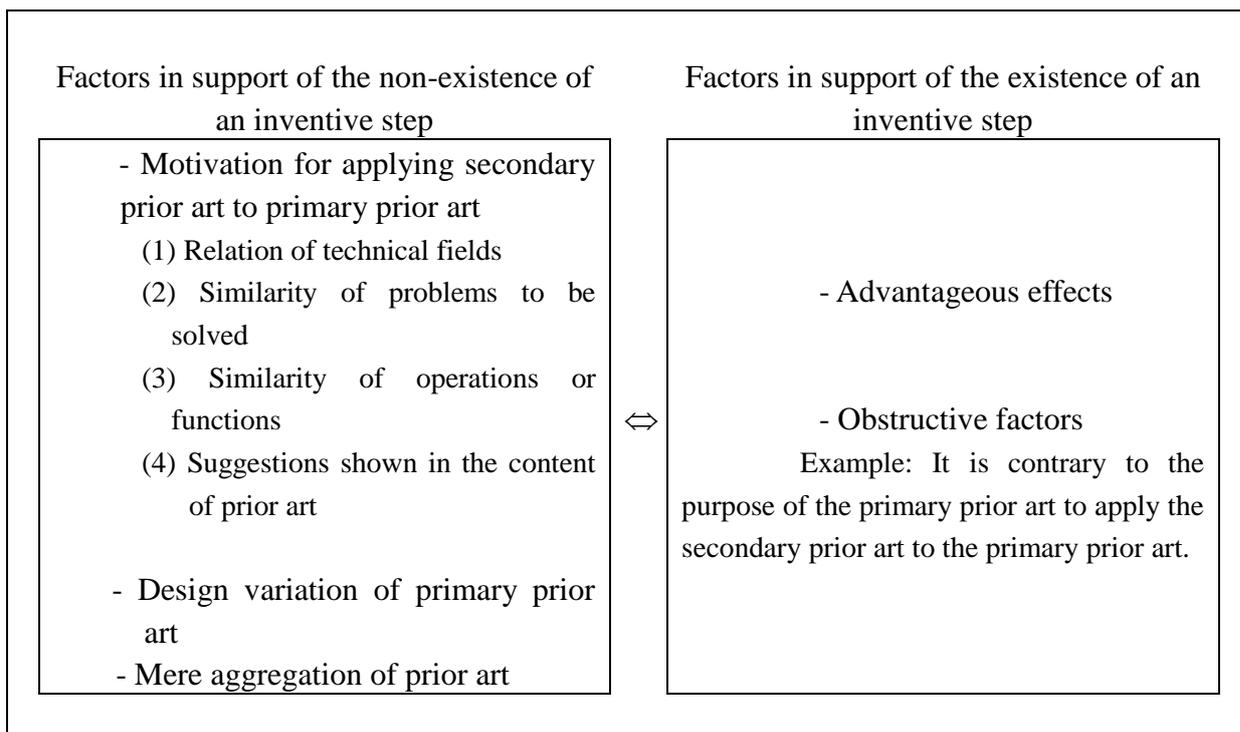


Figure: Main factors for reasoning

For example, the reasoning fails in the above step (2) if no secondary prior art corresponds to the differences between the claimed invention and the primary prior art, nor the differences are a design variation.

On the other hand, the reasoning is achieved in the second sentence of the above step (4) if there is a piece of secondary prior art corresponding to the differences between the claimed invention and the primary prior art, there is a motivation for applying the secondary prior art to the primary prior art (one of the factors for reasoning, see the above figure), and there is no factor in support of the existence of an inventive step.

### 3.1 Factor in support of the non-existence of an inventive step

#### 3.1.1 Motivation for applying secondary prior art to primary prior art

If the secondary prior art (B) is applied to the primary prior art (A) and then the resultant (A+B) is equivalent to the claimed invention (Note 1), the motivation to attempt this application is a factor in support of the non-existence of an inventive step.

It is determined whether or not there is motivation for applying the secondary prior art to the primary prior art by comprehensively considering the following points of

view (1) to (4). The examiner should note that it is not always possible to determine whether there is motivation by paying attention to only one of these points of view (1) to (4).

- (1) Relation of technical fields
- (2) Similarity of problems to be solved
- (3) Similarity of operations or functions
- (4) Suggestions shown in the content of prior art

(Note 1) The design variation etc. (see 3.1.2(1)) which is the exercise of the ordinary creativity of a person skilled in the art should also be considered in applying the secondary prior art to the primary prior art. Therefore, the case includes the application of the secondary prior art to the primary prior art with design variation to arrive at the claimed invention.

(1) Relation of technical fields

It is regarded as the exercise of the ordinary creativity of a person skilled in the art that he/she attempts to apply to the primary prior art any technical means of the technical field related to the primary prior art in order to solve the problems in the primary prior art. For example, the presence of a technical means that would be replaced in or be added to the prior art in the technical fields related to the primary prior art could be grounds for determining that there is motivation for a person skilled in the art to derive the claimed invention by applying that means.

In determining the presence of the motivation for applying the secondary prior art to the primary prior art, with respect to the "relation of technical fields", the examiner should also consider another point among the points of view (1) to (4) for motivation.

However, in the case where the understanding of "technical field" (Note 2) involves consideration of the points of view for problems to be solved, operations and functions as well as the point of view for products to which the prior art is applied, the determination based on the "relation of technical fields" also involves the consideration of "similarity of problems to be solved" and the "similarity of operations or functions". In this case, if it is found that there is a motivation based on the "relation of technical fields" without considering the other points of view for motivation, it is not necessary to consider the "similarity of problems to be solved" and the "similarity of operations or functions" for determination whether or not motivation involves.

(Note 2) The technical field is to be understood by paying attention to the applied products etc., and the principle and mechanism, and operations and functions.

Example 1:

[Claim]

A telephone apparatus which sorts records in an address book according to communication frequencies

[Primary prior art]

A telephone apparatus which sorts records in an address book according to levels of importance set by a user

[Secondary prior art]

A facsimile apparatus which sorts records in an address book according to communication frequencies

(Explanation)

The apparatus of the primary prior art and the apparatus of the secondary prior art share a feature of an apparatus comprising an address book. Their technical fields are mutually related from this viewpoint.

Moreover, if it was determined that they share the feature which makes a user's call operation easy, the relation between the two technical fields would be considered as well as the point of view for the problems to be solved, and operations and functions.

## (2) Similarity of problems to be solved

The similarity of the problems to be solved between the primary prior art and the secondary prior art can be a ground for determining that there is motivation for a person skilled in the art to derive the claimed invention by applying the secondary prior art to the primary prior art.

The similarity of problems to be solved can be recognized where there is similarity of the problems obvious to or easily conceived by a person skilled in the art at the time of filing between the primary prior art and the secondary prior art. The examiner determines whether the problems to be solved by the primary prior art and the secondary prior art are obvious or easily conceived based on the state of the art at the time of filing.

The examiner can also attempt the reasoning by a thinking process different from the claimed invention, based on the primary prior art which solves a problem

different from the claimed invention. Same applies to a claimed invention of which the problem to be solved cannot be recognized, such as an invention obtained through trial and error.

Example 2:

[Claim]

A plastic bottle for which a hard carbon film is formed on a surface

[Primary prior art]

A plastic bottle for which a silicon oxide film is formed on a surface

(The publication disclosing the primary prior art discloses that the silicon oxide film enhances gas barrier properties.)

[Secondary prior art]

A sealed vessel for which a hard carbon film is formed on a surface

(The publication disclosing the secondary prior art discloses that the hard carbon film enhances gas barrier properties.)

(Explanation)

There is similarity of the problems to be solved between the primary prior art and the secondary prior art with focusing on the film coating for enhancing gas barrier properties.

Example 3:

[Claim]

A pair of cooking scissors having a cap opener in a handle portion thereof

[Primary prior art]

A pair of cooking scissors having a shell cracker in a handle portion thereof

[Secondary prior art]

A petit knife having a cap opener in a handle portion thereof

(Explanation)

Providing multifunctionality to a cooking utensil such as a pair of cooking scissors or a knife is an obvious problem to be solved in the field of the cooking utensil, and there is similarity of the problems to be solved between the primary prior art and the secondary prior art.

### (3) Similarity of operations or functions

The similarity of the operations or functions between the primary prior art and the secondary prior art can be a ground for determining that there is motivation for a person skilled in the art to derive the claimed invention by applying the secondary prior

art to the primary prior art or associating the secondary prior art with the primary prior art.

Example 4:

[Claim]

A printing machine which cleanses a blanket cylinder by swelling a swelling member to contact a cleansing sheet

[Primary prior art]

A printing machine which cleanses a blanket cylinder by using a cam structure to contact a cleansing sheet

[Secondary prior art]

A printing machine which cleanses an intaglio cylinder by swelling a swelling member to contact a cleansing sheet

(Explanation)

There is similarity of the operations between the primary prior art and the secondary prior art with focusing on that the cam structure of the primary prior art and the swelling member of the secondary prior art are provided to make the cleansing sheet contact and separate from the cylinder of the printing machine.

(4) Suggestions shown in the content of prior art

The suggestion shown in the content of prior art for applying the secondary prior art to the primary prior art is a strong evidence for motivation for a person skilled in the art to derive the claimed invention by applying the secondary prior art to the primary prior art.

Example 5:

[Claim]

A transparent film comprising an ethylene/vinyl acetate copolymer and an acid-acceptor particle dispersed in the copolymer, wherein the copolymer is cross-linked by a cross-linking agent

[Primary prior art]

A transparent film comprising an ethylene/vinyl acetate copolymer and an acid-acceptor particle dispersed in the copolymer

(The publication disclosing the primary prior art mentions that ethylene/vinyl acetate copolymer is used as a member in contact with the components of the solar battery.)

[Secondary prior art]

A transparent film for use in a sealing film for a solar battery comprising an ethylene/vinyl acetate copolymer, wherein the copolymer is cross-linked by a cross-linking agent

(Explanation)

The publication disclosing the primary prior art suggests that the technique of the transparent film used as the sealing film for a solar battery is to be applied to the primary prior art.

### 3.1.2 Factor in support of the non-existence of an inventive step other than motivation

#### (1) Design variation etc.

If a person skilled in the art would arrive at the claimed elements that correspond to the differences between the claimed invention and the primary prior art by the following items (i) to (iv) (hereinafter referred to as "design variation etc." in this Chapter) starting from the primary prior art, there is a factor in support of the non-existence of an inventive step. Moreover, suggestion in the primary prior art for the design variation etc. is an effective factor in support of the non-existence of an inventive step.

- (i) Selection of optimum materials from publicly known materials to solve certain problems (Example 1)
- (ii) Optimally or preferably modified numerical ranges to solve certain problems (Example 2)
- (iii) Materials replaced by equivalents to solve certain problems (Example 3)
- (iv) Design variation or design choice associated with an application of specific techniques to solve certain problems (Examples 4, 5)

This is because they are merely regarded to be art derived from the ordinary creativity of a person skilled in the art.

#### Example 1:

Adopting a well-known water reaction adhesive material as an adhesive material of an outer surface of a skin side with a ball side in a ball for a ball game in place of an adhesive material for pressured adhesion is regarded to be merely a selection of optimum materials from publicly known materials.

#### Example 2:

In unhardened concrete, reducing the contained amount of particles measuring 75

micrometers or less to 1.5 percent by mass or less, that deteriorate flow property, is regarded to be merely an optimal or preferable modification of numerical ranges by a person skilled in the art.

Example 3:

Adopting a well-known brushless DC motor in place of a DC motor with a brush as a driving means of a bathroom drying apparatus characterized by a means for sensing temperature is regarded merely as replacement by equivalents.

Example 4:

In connecting an output terminal of a mobile phone to a digital television set as an external display device and displaying an image on the digital television set, generating and outputting an image signal (digital displaying signal) adapted to a display size and image resolution of the digital television set is merely a selection of a suitable method according to a type and performance of the external display device, and is regarded to be a design variation chosen by a person skilled in the art as appropriate.

Example 5:

In a system for providing accommodation facility information to a consumer in response to information input from a consumer terminal, it is a design variation chosen as appropriate by a person skilled in the art to adopt a list of foods and drinks as alternatives input from the consumer terminal and age of accommodation facility as the accommodation facility information provided.

## (2) Mere aggregation of prior art

Mere aggregation of prior art means that each of the claimed elements is well-known and their functions and operations are not related to each other. The claimed invention is determined to be made by the exercise of the ordinary creativity of a person skilled in the art where it is a mere aggregation of prior art. Mere aggregation of prior art is a factor in support of the non-existence of an inventive step. Moreover, the implication for aggregation of prior art in the primary prior art is an effective factor in support of the non-existence of an inventive step.

Example 6:

It is mere aggregation of prior art to attach a well-known windbreak cover member and a well-known tool storage means to a gondola apparatus for working at an outward walls of a

building comprising a well-known lift means A.

## 3.2 Factor in support of the existence of an inventive step

### 3.2.1 Advantageous effects

Advantageous effects over the prior art are factors in support of the existence of an inventive step. Where the examiner understands such effects based on the description, claims and drawings, the examiner should take them into consideration as factors in support of the existence of an inventive step. Advantageous effects mean effects which are given by the claimed invention and advantageous over the prior art (particular effects).

#### (1) Consideration of advantageous effects over the prior art

Where the claimed invention has advantageous effects over the prior art, the examiner should take them into consideration and attempt the reasoning that a person skilled in the art would have easily arrived at the claimed invention. The inventive step of the claimed invention is denied regardless of the existence of the advantageous effects where it is sufficiently reasoned that a person skilled in the art would have easily arrived at the claimed invention.

However, where the advantageous effects over the prior art satisfies the following condition (i) or (ii) and exceeds what is predictable based on the state of the art, they should be considered as factors in support of the existence of an inventive step.

- (i) The claimed invention has an effect of the different nature from that of the prior art and a person skilled in the art is not able to expect the effect of the claimed invention on the basis of the state of the art at the time of filing.
- (ii) The claimed invention has an effect of the same nature but significantly superior to that of the prior art and a person skilled in the art is not able to expect the effect of the claimed invention on the basis of the state of the art at the time of filing.

Especially for claimed inventions that belong to a technical field where it is difficult to expect the effect based on the structures of the products such as a selection invention (see 7 in “Section 4 Claims Including Specific Expressions”), the advantageous effects over the prior art are an important factor for determining the existence of an inventive step.

Example:

The claimed invention relates to motilin which has a specific amino acid sequence, shows six to nine times more active than the motilin of the prior art, and has advantageous effects in increasing intestinal motility. Where such effects exceeds what is predictable based on the state of the art at the time of filing, these effects are factors in support of the existence of an inventive step.

## (2) Consideration of effects stated in written opinion

In the following case (i) or (ii), the examiner should consider the advantageous effects over the prior art argued and proved in the written opinion (e.g. experimental results), etc.

(i) Case where these effects are stated in the description

(ii) Case where these effects are not stated in the description, but can be speculated by a person skilled in the art from the description or drawings

However, the examiner should not take these effects into consideration where these effects are not stated in the description and cannot be speculated by a person skilled in the art from the description or drawings.

### 3.2.2 Obstructive factor

(1) The factor which obstructs application of the secondary prior art to the primary prior art (obstructive factor) supports the existence of an inventive step. However, if it is sufficiently reasoned that a person skilled in the art would easily conceive the claimed invention after considering the obstructive factor, the claimed invention does not involve an inventive step.

Examples of obstructive factor are the following.

(i) The secondary prior art applied to the primary prior art cannot achieve the purpose of the primary prior art. (Example 1)

(ii) The secondary prior art applied to the primary prior art cannot adequately function. (Example 2)

(iii) The secondary prior art which is considered to be excluded from application and unable to be adopted by the primary prior art. (Example 3)

(iv) The secondary prior art which a person skilled in the art would not apply due to a publication disclosing that the secondary prior art is inferior to the other embodiment in respect of operations and effects of the prior art. (Example 4)

Example 1:

[Primary prior art]

A method for sterilization treatment of tap water by ozone, comprising the steps of: divaricating a water flow into a main flow and sub flow, introducing tap water from the sub flow to an anode, and producing directly ozone water by electrolyzing.

(The publication disclosing the primary prior art discloses that the purpose of the primary prior art is to avoid using an expensive apparatus for mixing gas and liquid (gas-liquid contact apparatus).)

[Secondary prior art]

A method for producing ozone water, comprising the steps of: electrolyzing pure water to generate ozone-containing gas in an anode chamber of an electrolysis tank, extracting the gas from the electrolysis tank to separate the gas from anode solution, and injecting the separated ozone-containing gas to water to be treated

(Explanation)

Using an expensive apparatus for mixing gas and liquid (gas-liquid contact apparatus) is contrary to the purpose of the primary prior art. Therefore, there is a factor teaching away from extracting the ozone-containing gas from the anode solution and injecting and dissolving it in the sub flow or main flow by adopting the secondary prior art in the primary prior art.

Example 2:

[Primary prior art]

A vane pump having a predetermined structure

[Secondary prior art]

A gasket having a predetermined form

(Explanation)

There is a factor teaching away from applying the secondary prior art to the primary prior art where the vane pump does not adequately function due to a gap by using the gasket of the secondary prior art for sealing the vane pump of the primary prior art.

Example 3:

[Primary prior art]

A thermostatic expansion valve adopting a method for joining a resin valve body having a pathway through which a liquid refrigerant passes and a pathway through which a gas phase refrigerant passes, and a control mechanism by caulking and fixing them

(The publication disclosing the primary prior art describes as a problem to be solved of the prior art that forming an external screw for screw fastening is expensive, an adhesive agent is

required for attachment and the attachment is laborious, and also describes a caulking and fixing method as a solution.)

[Secondary prior art]

A pressure control valve adopting a screw-fastening method using a screw joint for fixing two members

(Explanation)

The primary prior art excludes positively the screw-fastening method using the screw joint, and there is a factor teaching away from applying to the primary prior art the screw-fastening method using the screw joint disclosed in the secondary prior art.

Example 4:

[Primary prior art]

A method for driving a synthetic fiber in the process of false twisting in a thread passage guide and heating it with one non-contact heating device

(The publication disclosing the primary prior art describes decreasing dyeing spots as a purpose.)

[Secondary prior art]

A method for heating the synthetic fiber in the process of false twisting with a plurality of non-contact heating devices (The publication disclosing the secondary prior art describes several embodiments and the fact that the embodiment which operates all non-contact heating devices at temperature  $a$  is likely to generate dyeing spots compared to the other embodiments.

(Explanation)

The embodiment of the secondary prior art is shown as an inferior example in terms of decreasing dyeing spots which is the purpose of the primary prior art. Therefore, there is a factor teaching away from operating the non-contact heating device of the primary prior art at temperature  $a$  by applying the secondary prior art to the primary prior art.

(2) A piece of prior art is inappropriate for citation where the publication which discloses the prior art provides the descriptions that obstruct a person skilled in the art from easily arriving at the claimed inventions. Therefore, there is an obstructive factor for reasoning where the primary prior art or the secondary prior art is inappropriate. However, even if the prior art documents etc. provide the descriptions that obstruct a person skilled in the art from easily arriving at the claimed inventions at first glance, the prior art is appropriate as cited prior art where there is a sufficient factor in support of the non-existence of an inventive step and the reasoning.

### 3.3 Notes for determining an inventive step

(1) The examiner should take note of the avoidance of hindsight such as the following case (i) or (ii) due to determining an inventive step after acquiring knowledge of the claimed inventions.

- (i) The examiner assumes that a person skilled in the art would have easily arrived at the claimed invention.
- (ii) The examiner understands that a cited invention is approximate to the claimed invention (see 3.3 in “Section 3 Procedure of Determining Novelty and Inventive Step”).

(2) The examiner selects generally the primary prior art which is same as or close to the claimed invention from the aspect of technical field or problem to be solved (Note 1).

The primary prior art of which technical field or problem to be solved is considerably different from that of the claimed invention is likely to make the reasoning difficult. In this case, it should be noted that it is required to reason more deliberately whether or not a person skilled in the art would arrive at the claimed invention starting from the primary prior art (e.g. considering whether or not there is a sufficient factor for motivating to apply the secondary prior art to the primary prior art).

(Note 1) Problems to be solved obvious to or easily arrived by a person skilled in the art are included.

It should be considered whether or not the problems to be solved are considerably different between the claimed inventions and the primary prior art. The problems to be solved by the primary prior art and the secondary prior art are not necessarily the same as the problems to be solved discussed in 3.1.1(2) (the problems to be solved which is considered in terms of a similarity between the primary prior art and the secondary prior art).

Moreover, where the problem to be solved of the claimed inventions is novel and inconceivable by a person skilled in the art, the claimed invention is usually completely different from the primary prior art in terms of the problems to be solved. Therefore, the fact that the problem to be solved is novel and inconceivable by a person skilled in the art may be a factor in support of the existence of an inventive step.

(3) The examiner should not omit to consider the reasoning (considering whether or not there is a factor teaching away from applying the well-known art) only because the cited

prior art as the ground of the reasoning or design modification is well-known.

(4) Where the applicant admits that a technique stated in the description is prior art at the time of filing, the examiner may consider such technique as a part of the state of the art at the time of filing.

(5) In principle, an invention of a process for manufacturing a product and use of a product involve an inventive step where the invention of the product involves an inventive step (Note 2).

(Note 2) The exception is a method of manufacturing a product where an invention related to the product per se is a use invention (see 3.1.2 in “Section 4 Claims Including Specific Expressions”).

(6) The examiner may consider commercial success and the fact that the invention had been desired to achieve for a long time as a secondary consideration for supporting the existence of an inventive step only if the examiner is convinced that these facts are not derived from other factors such as sales promotion techniques or advertisements but from the technical features of the claimed inventions on the basis of the applicant’s arguments and evidences.