

# Study on Criteria for Problem-oriented Assessment of Inventive Step <sup>1</sup> (I)

Li Yue, Feng Tao, Zou Kai, Li Yingqi and Ni Xiaohong

## I. Introduction

In recent two years, under the guidance of the state policies, since patent examination tends to be in pursuit of unity of legal effects and social effects, the assessment of inventive step is playing an increasingly important role in the patent examination system, and higher requirements are set for the level of assessment. As a result, some problems and confusions may be frequently encountered in practice.

Albert Einstein once said that “we cannot solve our problems with the same thinking we used when we created them”. To modify the old thinking model while creating a new one is an arduous mission. This article is an attempt to solve the current problem in a systematic approach based on the in-depth theoretical study on criteria for problem-oriented assessment of inventive step.

## II. Difficulties and problems in the application of provision on inventive step

Identify the problems so as to solve them with a definite objective. Why is the assessment of inventive step so hard? We cannot figure it out without talking about the legal elements of the inventive step.

Article 22.3 of the Patent Law reads inventive step means that, as compared with the technology existing before the date of filing, the invention has prominent substantive features and represents a notable progress and that the utility model has substantive features and represents progress.

It is provided in the Guidelines for Patent Examination

(hereinafter referred to as the Guidelines) that when evaluating whether or not an invention represents notable progress, the examiner shall primarily consider whether or not the invention produces advantageous technical effects. Nevertheless, an absolute majority of inventions that make contribution to the prior art can certainly achieve advantageous technical effects, which means that the two legal formal requirements, i.e., prominent substantive features and notable progress, are internally correlated, not dual requirements on a par. As to the suspicion from other countries that “the purpose for setting two legal requirements for the provision on inventive step is to pursue a higher standard for inventive step as compared with other countries”, the answer is self-evident. Once the examination on the possession of prominent substantive features is concluded, the decision on notable progress will come out. By reason of the foregoing, the key and difficulty of inventive step assessment lie in the judgment on prominent substantive features.

Judging whether an invention possesses prominent substantive features is to judge whether an invention is obvious to those skilled in the art with respect to the prior art. Pursuant to the provisions of the Guidelines, the next three steps need to be followed in order to make a judgment: (1) determine the closest prior art; (2) determine the distinguishing features of the invention and the technical problem to be actually solved by the invention; and (3) determine whether or not the claimed invention is obvious to those skilled in the art (hereinafter referred to as “the three-step method”).

“Objectiveness” is a hard nut to crack in the assessment of the inventive step. No precise and scientific reasoning can guarantee a relatively objective conclusion made by a judging subject after subjective thinking. As far as the

application of “the three-step method” is concerned, it is focused on the visible part of the iceberg above the sea level — the third step of judging whether there is any “teaching” because that step directly decides the conclusion of inventive step assessment.

The three steps in “the three-step method” are closely linked and inseparable. The assessment of inventive step consists of fact-finding and application of law. Finding of numerous facts will affect the application of law. The first two steps involve the determination of the technical solution claimed in the claims and the closest prior art, as well as the determination of the level of knowledge and capabilities of those skilled in the art. Even the third step which seeks for the presence of teaching is based on the factual finding of the entire teaching from the prior art. Accurate fact-finding is the basis of objectiveness in the assessment of inventive step. Stabilisation of the basis is in association with the understanding and application of legal rules in the step of judging whether there is any teaching.

The above difficulties bring about some common issues in examination practice, which are substantially divided as follows according to the steps of the “three - step method”:

In the first step, wrong or improper choices are made in determining the closest prior art. Incorrect selection of the closest prior art may directly result in an erroneous conclusion, and render the following two steps in the three-step method meaningless. For the assessment of inventive step, there is a difference in quality between prior art literatures. If a correct choice of references is made, it can represent the current level of technologies, and a stronger motivation may be aroused for combining the reference with other prior art. In contrast, if a choice is made wrongly, it will certainly increase the difficulty in combining the reference with other evidence, thereby rendering the examiner’s opinions far-fetched and unconvincing.

In the second step, the following issues may arise: (1) technical features are “fragmented”. The distinguishing features embody the characteristics of an invention. Assessment of invention step is aimed to weigh whether those features are prominent and substantive. If the features are determined wrongly, it is unable to find out or accurately decide what contributions the invention has made. (2) The technical effect is determined arbitrarily. Effect is the factual basis for determining the technical problem to be actually solved. If the technical effect is determined in a biased, par-

tial or false manner, or not caused by the distinguishing features, it will directly result in an incorrect determination of the technical problem. (3) The technical problem to be actually solved by the invention is not determined or determined incorrectly. Attention is only paid to whether the technical solutions are similar to each other without taking account of what technical problem is solved by incorporation of the distinguishing features, or the technical problem as asserted by the interested party is directly taken as the technical problem to be actually solved by the invention. “The three-step method” stems from the “problem - and - solution approach” in Europe. Suppose the technical problem is not determined or determined incorrectly, it is easy to image that the result of the assessment of inventive step would be affected subversively.

In the third step, the following issues may arise: (1) the entire teaching provided by the prior art cannot be determined accurately. (2) Ignore the guiding function of the technical problem in the step of finding a teaching, and only take the technical features into consideration. (3) Motivation inspired under the teaching cannot be known accurately. (4) The judging process is subjective and suspected of “hindsight”, or the capabilities of those skilled in the art are not estimated correctly.

How can those issues be solved? Chairman Mao Tse-tung once said: “Feelings only change the phenomenon resulting from the problem, and it is the theories that identify the nature of the problem and solve the problem fundamentally.” Professor Wang Limin pointed out in his book entitled “On Legal Thinking”: if the legal thinking is merely focused on logical thinking, the law would become mechanical and depart from the social reality. Of course, if we purely take a value judgment into consideration, there seems to be no yardstick for the judgment, and lack of logic may lead to arbitrary discretion. As a result, we should not only emphasize the process of logical reasoning of the examination standards, but also place emphasis on the value judgment, by combining technical thinking with legal thinking, or even policy thinking in pursuit of unity of legal effects and social effects and for the sake of avoiding one-sidedness caused by a single way of thinking.

To find a right methodology, we’d better return to the theoretical level to reconsider those issues.

### III. Establishment of “three-step method” from the perspective of the legislative tenet of the provision on inventive step

#### 1. Relationship between the provision relating on inventive step and Article 1 of the Patent Law relating to the tenet for establishment of patent system

The patent system is established to give incentives to technical innovations by taking the advantage of the extra boost provided by the patent system, in addition to the regulation and promotion of the common market, in such a way to accelerate the economic development and social progress in a more effective manner for meeting the new needs of the social development. Thus, patents shall be granted to invention-creations which are novel and make great contributions to the technical progress.

Being in line with the tenet for establishment of the patent system, the provisions on inventive step are set forth to encourage people to challenge the most valuable creative missions is exchange of exclusive rights, and to ensure that the “oil of interests” is selectively fuelled to the valuable “fire of creativity”; and additionally, those provisions provide a space of freedom for common innovations achieved by the regulation of the common market, so that those skilled in the art are capable of making improvements and modifications by taking advantage of and on the basis of the prior art. As interpreted in the Guidelines, “if a person skilled in the art can obtain the invention just by logical analysis, inference, or limited experimentation on the basis of the prior art, the invention is obvious.”

Therefore, the provision on inventive step serves to discriminate the patents by the level of innovation, which has a bi-directional guiding function, directly acts on the origin of the invention-creations and effectively conveys a quality-oriented national policy. Suppose the inventive-step standard is set too low. It may first deprive the value and use of the prior art. The grant of exclusive right to an invention which can be created without incentives from the patent system may lead to abuse of low-quality patents, and increase search and licensing costs and other social costs related to patent implementation and protection. Important core and basic invention patents may be easily surrounded by slightly improved dependent inventions, which lead to the fact that the licensing fees go to the right holders of dependent

patents, and the motivations of core and basic inventors are impaired. Too many earlier patents will affect the effective utilization of the later patents, and problematic earlier patents will hinder valuable fair competition. It can thus be seen that accurate criteria for assessing inventive step can prevent the low-quality granted patents from undermining the innovation of the whole society and embody the true value of the patent system.

#### 2. Function and position of the provision on inventive step in the patent review system

Inventive step is the core of the patent review system and explains the reasonableness of the grant of patent to an invention-creation.

Among the requirements for inventive step, novelty and practicability, practicability is what we called the entry level requirement. If an invention does not fall within the extreme circumstances, such as being unable to be produced or utilized in the industry, or being obviously useless or departing from the society’s needs, it can pass through the review at this level. Apparently, some inventions that are identical or substantively identical with the prior art, or even degraded may be left for discrimination in the next step.

Novelty and inventive step are internally correlated, and novelty may be regarded as the lowest inventive-step requirement. The novelty requirement is targeted to the “presence” or “absence” of innovation, and has not yet been in the phase of finely scaling the degree of innovation. Therefore, in the patent review system, only the provision on inventive step is called the “heart” of patent review as it is mostly relevant to the measurement of the technical contribution made by an inventor, and mainly used for evaluating the value of the invention-creation. Just because the level of inventive step varies for different patents, once it is required to evaluate the degree of inventive step, the provision on inventive step is obviously more complicated than the provision on novelty and tends to result in confusion and divergence of views, so the legal application of the provision on inventive step shall be taken into consideration while strictly following the tenet of the patent law and the legislative purpose of the provision on inventive step.

#### 3. Analysis on establishment of the “three-step method”

The legal requirement for an invention that is considered to be inventive is the possession of prominent substantive features. “Features” and whether they are “prominent” and “substantive” shall be clarified by means of compari-

son. Only through comparison can we solve a problem objectively. For that reason, the “three-step method” is a method of comparative judgment.

#### (1) The principle of the “three-step method”

The method of comparative judgment, like the “three-step method”, is a result of wisdom. It highly extracts and condenses the abundant and complicated technological innovation processes in reality, and then takes them as a reference in the logical assessment of the intellectual contributions made by the invention - creations. The “three - step method” is embodied as the following three steps: first, the determined closest prior art is taken as a reference point; second, the invention is compared with the prior art represented by the reference point to objectively determine the “features” (namely, the distinguishing features) of the invention over the prior art, and the contribution (namely, the technical problem to be actually solved) made to the prior art by the invention due to the incorporation of those “features”; and finally, an examiner judges whether an invention is obvious from the viewpoint of those skilled in the art by seeing whether the technical problem can be solved on the basis of the prior art represented by the closest prior art.

#### (2) Elements of “three-step method”

The highly condensed “three - step method” indeed contains rich contents. We are attempting to use the following picture to show vividly the method of comparative judgment used in the “three-step method” and five important elements thereof.

Principle of “the three-step method”

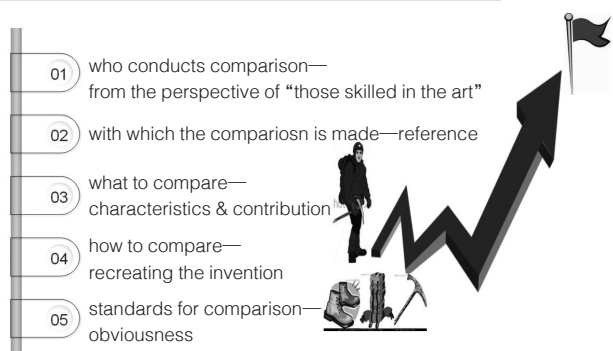


Fig.1

First, “who conducts comparison”. As shown in the above picture, the man is obviously a professional mountaineer, who is qualified as having certain physical strength, mountain climbing skills and knowledge, as well as necessary equipment. From the perspective of praxeology, the

subject of the “three - step method” is purposefully designed as those skilled in the art, which is a precondition to use the general R&D work in the pertinent technical field as the reference to be compared with the achievements of the invention-creation in order to evaluate the intelligence and contributions of the invention. The subject of such judgment determines that the invention shall be viewed from the perspective of “those skilled in the art”, and the level of cognition and discretion used in the judgment process shall also be compatible with the capability and skills of “those skilled in the art”.

Second, “with which the comparison is made”. If the prior art is compared to a vast ocean, a handful of water from nowhere can represent it. In this sense, the selection of the closest prior art is very important. The closest prior art should be the one that best represents the state of the art, or in other words, the creativity and value of the invention can be most accurately reflected by comparing the invention with the closest prior art; what’s more, when starting from the closest prior art, those skilled in the art can carry out the invention under discussion in the easiest and most promising manner.

Third, “what to compare”. It is the features and contribution that should be compared, which is denoted by a red flag on the other end of the curve in the picture. The creativity of an invention is centred on the distinguishing features, and the contribution and value of the creativity lies in the resolution of a specific technical problem by incorporating those distinguishing features. Moreover, the technical problem to be actually solved by the invention, in which the value of the invention lies, further calls on and challenges those skilled in the art to “re-create an invention”.

Fourth, “how to compare”. The closest prior art is set as the starting point of the invention. Following a positive R&D concept of technological innovation in the pertinent technical field, the creating process of the invention can be simulated by way of “recreating the invention” so as to judge whether those skilled in the art in place of the inventor can complete the challenge to reach the innovative level of the evaluated invention-creation. If those skilled in the art can successfully complete the invention by simulation based on their knowledge and capabilities, it means that the invention possesses no inventive step. The process of putting the judging subject in a virtual scene where those skilled in the art solve the same problem before the filing date may prevent the judging subject from reviewing the in-

vention with hindsight.

Fifth, “standards for comparison”. The standards for determining whether those skilled in the art successfully simulate an invention are those used in the step of determining whether there is any “teaching” in the prior art. This is just like setting a mountain-climbing difficulty coefficient. If various resources, such as a climbing bag, climbing shoes and a climbing crutch, are accessible freely, it would be relatively easy to reach the top of the mountain with the external help. If the resources are obtained under severely stringent conditions, it would be difficult to conquer the mountain with no help. Consequently, standards directly determine the outcome of the assessment of inventive step. Just for that reason, the step of determining any “teaching” is the basic policy based on which different countries adjust the criteria for the assessment of inventive step. A typical example is the evolution of TSM criteria to KSR criteria in the United States.

#### (3) Characteristics of the “three-step method”

It would not be hard to summarize the characteristics of the “three-step method” on the basis of the above flow chart and analysis of the various elements. The “three-step method” originated from Europe. Tracing back to the origin of the “three-step method”, its characteristics can be summarized by two words, namely “objective” and “streamline”.

##### a. Objective—striving for innovation and objectiveness

The “three-step method”, which is more close to the positive thinking of innovation, objectively determines the technical problem to be actually solved by the invention based on the technical effects and with reference to the objectively existing closest prior art, so as to prevent the applicant from exaggerating and distorting the facts and examiners from subjective speculation.

##### b. Streamline—simplifying the complicated process for the sake of consistency

The European Patent Convention Handbook precisely and vividly uses the word “streamline (to design or construct with a streamline; to make simpler or more efficient)” to interpret the purpose of “the problem-and-solution approach”. The “three-step method” actually abstracts the process of completing an invention into three typical steps: to find out the R&D starting point, to determine the R&D objective, and to judge whether there is any teaching from the prior art. Such a streamline logical thinking seems to be simple and plain, but directly hits the point. With the help of the

streamline logical reasoning, the judging efficiency can be greatly enhanced, and the conclusions may be more definite and consistent.

The intrinsic advantages and characteristics of the “three-step method” resulting from the system design can only be embodied through accurate application. The above issues occurring during the application of the “three-step method” urge us to delve into the steps one by one in order to further reflect on our understanding of the criteria and the issues that appeared.

## IV. The first step of the “three-step method”: “selection of the closest prior art”

### 1. Function and significance of the first step of the “three-step method”

Since it is impossible in practice to compare the invention to be assessed with numerous prior art references in its entirety, we have to select the most representative reference from the entirety of the prior art to conduct the comparison, and the selected prior-art technical solution is called “the closest prior art”.

On the one hand, from the viewpoint of the legislative intent of the provision on inventive step, the possession of inventive step is judged with respect to “the entirety of the prior art”. The utmost issue to be solved in the judgment is who “judges whether the invention possesses prominent substantive features”, and therefore the selected closest prior art should be “a technical solution in the prior art which is the most closely related to the claimed invention”.

The particular technical solution appears in the form of the representative of the prior art as a whole, and the comparative result between the invention - creation to be assessed and the prior art can tell us the innovation of the invention with respect to the prior art in its entirety. Hence, “the closest prior art” shall be the particular individual reference that most represents the technological level of the entirety of the prior art, and by “most represent” is meant that the closest prior art is most closely related to the invention to be assessed in terms of technology. In contrast, if the invention is not compared with the most representative individual reference in the “entirety of the prior art”, any conclusion drawn from the comparison between the invention and the individual reference would be of no significance.

On the other hand, as can be understood from the interpretation of the legislative intent of the judging manner of the “three-step method” as stated in the preceding paragraph, the closest prior art has dual functions. First, the closest prior art as the representative of the prior art is compared with the claimed invention in the second step of the “three-step method” so as to determine the innovation of the invention over the prior art and the contribution made by the innovation. Second, in the third step for judging whether there is any teaching to improve the prior art to arrive at the claimed invention, the closest prior art serves as the basis for improvement of the prior art by those skilled in the art, or as the starting point in the process of judging whether those skilled in the art who “positively recreate” the invention have the motivation to complete the invention.

## 2. Selection and determination of the closest prior art

For realizing the significance of the establishment of the first step in the “three-step method”, we’d better have a clear and solid understanding of the examination criteria for selecting the closest prior art. The Guidelines provide that “the closest prior art may, for example, be an existing technology in the same technical field as the claimed invention, and its technical problem to be solved, technical effects or intended use are the closest to the claimed invention, and/or has disclosed the greatest number of technical features of the claimed invention; or be an existing technology which, despite being in a different technical field from the claimed invention, is capable of performing the function of the invention and has disclosed the greatest number of technical features of the invention. It should be noted that, when determining the closest prior art, account shall be first taken of the prior art in the same or similar technical fields.”

As known from the above provisions, in the first place, the closest prior art shall be selected under the principle of comprehensive consideration, that is, comprehensive consideration shall be given to numerous factors, such as, the technical field, the technical problem to be solved, technical effects or intended use, and the times of disclosure of technical features; second, the technical field is the first factor to be considered when taking those factors into comprehensive consideration; third, the Guidelines discuss two circumstances, i.e., the closest prior art falls within the same technical field as the claimed invention, or the closest prior art and the claimed invention, though being in different technical fields, are able to perform the same function. It can be seen therefrom that the “technical field” is not a functional

field, but an application field focusing on a particular usage or purpose.

However, the Guidelines provide the guidance in principle, but meanwhile leave some issues in the application process: for example, what is the weight of each factor that needs to be considered comprehensively; how can the technical field be accurately located, and what should be done in determining the closest prior art. A wrong selection of the closest prior art may be against the legislative intent of the provision on inventive step and the original intent of the establishment of the three-step method. Thus, we should carefully consider how to solve these issues.

## 3. Comprehensive consideration

An invention-creation is inspired by the motivation to solve the technical problem existing in the prior art, and is completed by successfully solving technical problems. The function and significance of the closest prior art determine that the selected prior art shall be in reasonable association with the technical problem to be solved by the invention, which is the basic requirement for the closest prior art. In other words, only the prior art which is reasonably associated with the technical problem to be solved by the invention is qualified as a starting point, and such a starting point mostly comes from the field where most attempts are made for the invention. This explains why the technical field (application field) becomes the best starting point for coarse selection. Only the point that is promising in heading for the terminal is qualified as the starting point. By promising we mean that there is a hope in finally reaching the terminal if we set off from the starting point along the line of the positive thinking of innovation. Among numerous promising starting points, the one that is most closely related to the claimed invention in terms of technology can best represent the level of the prior art in its entirety. The following is a detailed explanation of those aspects of comprehensive consideration:

(1) The basic requirement for the starting point is reasonable relevance between technical problems

What is meant by reasonable relevance between technical problems? “Reasonable relevance” is found through comparing the information presented in the prior art and the technical problem to be solved by the invention, rather than the technical problem existing in the prior art and the technical problem to be solved by the invention. The technical problem to be solved by the claimed invention does not need to be solved by the prior art. Nor is it required that the



technical problem to be solved by the claimed invention should be expressed using exactly the same words as those of the technical problem in the prior art. "Reasonable relevance" refers to the inherent technological link between the prior art and the claimed invention that can be determined by those skilled in the art. Thus, the prior art may recite the problem attended to by the invention, for example, the relevant problem in existence, put forward or to be addressed by the invention. Or the problem to be solved by the invention is not recited in the prior art, but those skilled in the art are clearly aware of the objective existence of the relevant problem. The above way of thinking is for preliminary screening so as to exclude those completely unrelated prior art references. If the closest prior art is totally unrelated to the technical problem to be solved by the invention, for instance, there is no such a problem intended to be solved or the technical problem has been already solved, then the closest prior art will, in no way, become the starting point.

How can we find out if the prior art has reasonable relevance to the technical problem of the claimed invention? Technical field is the soil to create an invention. The same soil would urge the inventor, when facing the same or similar technical problem, to make new innovations and modifications in order to solve the technical problem, and meanwhile "nourish" the inventor to complete the invention. Thus, it is usually easy to find, in a technical field identical with or close to that of the invention-creation, the prior art reference having reasonable relevance to the technical problem to be solved by the invention and take the same as the starting point of improvement. On the vast land of prior art, conducting the search of the closest prior art in an identical or close technical field is the most efficient way as it narrows the range of the search for the technical problem having reasonable relevance. In this sense, the technical field is the basis for seeking the closest prior art.

The following three aspects shall be taken into account when seeking the closest prior art on the basis of the technical field: a. the application field is more important than the functional field; b. division of technical fields is not mechanical and rigid, and account shall be taken of background art, technical problem, object, purpose, function and technical concept, etc. so as to accurately determine the technical field which nourishes the invention-creation, and effectively find out the prior art that has reasonable relevance to the technical problem of the claimed invention; c. the relation-

ship between the reasonable relevance and technical field shall be handled well. Reasonable relevance between technical problems is the object and principle to be followed, and taking the technical field as the starting point is the means. Consideration of the technical field does not constitute a limitation to the selection of the closest prior art. Hence, the technical problem is the key point to be considered in order to overcome the limitations caused by merely searching in the identical or close technical field. The above view will be further elaborated with reference to the following case.

For instance, the patent in dispute mentioned in the invalidation decision No.25725 relates to an ampoule filling process. Since an ampoule bottle has a small size and is made of thin glass, the inner diameter of the head portion is quite close to the outer diameter of the infusion cannula. There may occur two problems during the filling process: one is that the head portion is prone to be broken, and the other is that residual medicine liquid left on the wall of the head portion has an influence on the subsequent molten glass sealing, thereby rendering the amount of medicine liquid inaccurate. To this end, the technical problem to be solved by the invention involves accurate centring. Exhibit 1 used in this case relates to beverage bottle filling (such as, beer), during which the positioning problem surely exists. But things are quite different.

After investigation into the technologies of filling machines, it is found that the patent in dispute and Exhibit 1 both fall within the field of filling in terms of common functions. In comprehensive consideration of the technical field, usage, technical problem, technical concept, technical means, technical effect and the like, we can tell that Exhibit 1 does not have the technical problem intended to be solved by the patent in dispute. They are by no means similar to each other, and adopt different technical concepts and technical means for solving different technical problems, thereby achieving different technical effects. The reason is that as time goes by, the technical innovations in that field further develop into different technological branches in various orientations according to diversified market or R&D demands. Exhibit 1, which is under a different branch from the patent in dispute, is no longer faced with the technical problem to be solved by the patent in dispute and cannot serve as a promising starting point.

The confusion caused in the step of determining the technical field of this case clearly explains that there are un-

certainties as to the division of technical fields. The technical problem is in a dominant position in the process of finding the closest prior art. With the rapid development of technologies, “flourishing and booming” of technologies will give rise to change and evolution of division of technical fields. The technical innovations will further develop into different technological branches in various orientations according to diversified market or R&D demands, such that technical problems existing under different branches may not be relevant at all. The prior art under one branch cannot function as a promising starting point for obtaining an invention-creation under other branch, or different branches further constitute different technical fields.

As stated above, the most common choice at present is to find out the closest prior art from the technical field that is identical with or close to that of the invention. Nevertheless, identicalness or closeness of technical fields does not constitute a limitation to determination of the closest prior art. Similarity in terms of technical problem and function is also sufficient to guide those skilled in the art to make further improvement based on the closest prior art. For instance, although an invention and the prior art are within different technical fields, if they intend to solve identical or similar technical problems using the same technical means under the same principle, the difference of the technical fields would not hinder those skilled in the art from finding out the prior art reference in a pertinent technical field under the guidance of the technical problem or function and further using the prior art reference as the starting point of the route to work out the technical solution of the invention. This is especially the case when technologies develop rapidly, technical fields are divided finely and more and more technical fields overlap each other.

For instance, the re-examination decision No. 40592 relates to a method for making a microwave ceramic component by fine laser etching. Exhibit 1 discloses a method for fine-etching a quartz crystal by way of laser irradiation. Although the application in suit differs from Exhibit 1 in the properties of processed objects and application field, the application of the fine laser etching technology to hard materials, like ceramics and quartz, follows the same principle and is aimed to solve the same problem, i.e., laser beams can be focused to produce a small facula so as to selectively gasify materials in part with a proper energy density, thereby addressing the problem of fine adjustment of micro-electronic components. Related references have provided

teaching of using the said technology to manufacture many integrated circuit components. Hence, identicalness and relevance in terms of technical problem and function would suffice to guide those skilled in the art to start from Exhibit 1 to make further improvements or modifications.

Additionally, there may be the exception that technical problems in the same application field are not relevant at all. The technical problems to be addressed by inventions are tremendously different. The prior art references in the same or close technical fields may solve the technical problems that are totally irrelevant to the technical problem intended to be solved by the invention. For instance, suppose there is a variety of methods for preparing a chemical product. An inventor provides an improved method for avoiding the damage caused by the toxic solvent residue used in the method A, whereas the method B which uses no toxic solvent is not faced with such a technical problem caused by the toxic solvent, although the inventions using the method A and method B may be classified into the same IPC category.

(2) Judge whether the starting point is promising from a positive perspective of innovation

We do not deny the importance of meeting the requirement that the closest prior art should have reasonable relevance to the technical problem to be solved by the invention as stated in the preceding item (1), but it is merely a basic requirement for the closest prior art. Next, it needs to judge whether the starting point is able to render the successful application of the “three-step method” promising from a positive perspective of innovation. By “promising” we mean that the invention can be achieved on the basis of the particular prior art by a correct way of thinking and means. Only such a prior art reference is valuable as the basis for judgment.

If, from the viewpoint of innovation, R&D on the basis of the particular prior art reference can, by no means, guarantee the completion of the invention, even though the technical means disclosed in the art is highly similar to that used in the invention in dispute, it is hard to challenge the inventive step of the invention. It can be seen that this step is aimed to exclude the non-promising prior art references, unless there is any teaching in the other prior arts reference changes the cognition of those skilled in the art.

During the process of comprehensive consideration, the prior art reference which has the same inventive concept as the invention can be regarded to solve the technical



problem along the same route of the invention. Generally speaking, the prior art that is distinct from the invention in terms of inventive concept is more promising in achieving the object. Hence, attention shall be paid to the role of inventive concept in comprehensive consideration.

For instance, in the case mentioned in the re-examination decision No. 106894, claim 6 is directed to an antimicrobial composition. To overcome the shortcoming that a surface disinfectant does not have a fast acting effect for non-treatment purposes, the applicant applies the composition consisting of three disinfecting agents (eugenol, thymol and terpineol) to the surface disinfectant as the composition has a fast acting effect at a lower concentration. Following this concept, the composition is applied to human bodies and surfaces of objects for a fast acting effect. Reference 1 relates to a bactericidal preparation with an aim to solve the drawbacks of antibiotics, such as insufficient antibiotic effect, instability and malabsorption into skin. The inventive concept proposes the use of a composition of eleven antibiotics selected from at least three categories, and intends to achieve a stable, in-depth and standing antibiotic treatment by changing the properties of the solvent. Fast acting and standing effect, as well as surface sterilization and penetration into subcutaneous tissues for disinfection, are different technical problems. The present application and Reference 1 adopt two different inventive concepts to solve them, just like climbing up different mountains along dissimilar routes. Even though some antibiotics used in the present application and Reference 1 are the same, those skilled in the art would not conceive of using the long-acting antibacterial agent that is penetrable into the subcutaneous tissues used in Reference 1 as the promising starting point for obtaining the fast-acting antimicrobial composition for surface sterilization of the present application.

(3) Find out the “closest” prior art by judging the degree of technological closeness

If there are multiple promising prior art references that are reasonably relevant to the technical problem to be solved by the invention, the meaning of “closest” in the “closest prior art” provided in the Guidelines shall be borne in mind in selecting an individual reference that best represents the level of the prior art. The word “closest” herein mainly refers to the degree of technological closeness, which is usually the smallest or easiest improvement required for achieving the invention based on that prior art reference serving as the starting point. Such a judgment shall

be made through comprehensive comparison between the prior art reference and the invention in terms of the technical problem, inventive concept, technical means, usage and technical effect, rather than simply taking into account the number of disclosed features. This step is a choice preferable than the first two steps.

Similar to the preceding item (2), the judgment in item (3) is in close association with the understanding of inventive concept and selection of technical means. Due to the limited length of the article, relevant contents will be presented in the upcoming issue.

This article analyses the selection of the closest prior art at three levels in an effort to provide a solid understanding of the principle of comprehensive consideration from different perspectives; however, in practice, judgment at three levels may be conducted simultaneously. ■

The authors: Patent Reexamination Board of the SIPO

---

<sup>1</sup> This article is the result of the research on “examination criteria” — a key project of SIPO in 2016 conducted by the authors.