

Study on Criteria for Problem-oriented Assessment of Inventive Step (II)

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V. The second step of the “three-step method”: “determination of the distinguishing features of the invention and the technical problem actually solved by the invention”

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

According to the Guidelines, the examiner shall first analyse the distinguishing features of the claimed invention as compared with the closest prior art and then determine the technical problem to be actually solved by the invention on the basis of the technical effect achieved by the distinguishing features.

The distinguishing features are determined by comparing the claimed invention with the closest prior art. To determine the distinguishing features is, in fact, to find out the differences of the invention with respect to the prior art, which reflect the innovations made by the invention to the prior art. Thus, the significance in establishing the second step of the “three-step method” first lies in embodiment of innovations made by the invention in the form of tangible distinguishing features.

Moreover, the technical problem actually solved by the invention shall be determined on the basis of the technical effect achieved by the distinguishing features. The technical problem actually solved by the invention is the technical task successfully completed through innovation made by the invention and summarized by taking the technical effect achieved by incorporating the distinguishing features as a factual basis, which is indeed the contributions and values

made by the innovations of the invention to the field it belongs to. Thus, the significance in establishing the second step of the “three-step method” also lies in definition of intangible contributions and values made by the invention in the form of the technical problem actually solved by the invention.

The determination of distinguishing features, technical effect and technical problem in the second step is just like a chain having a series of interlocked links, and forms a connection between the first and the third step. The technical problem actually solved by the invention is a thrust encouraging those skilled in the art to re-create the invention in the third step and lights up the route in search of teachings.

2. Issues occurring during the examination phase

The Guidelines set forth abstract provisions. The specific issues facing us are what is meant by technical features, how to compare claims with the closest prior art, how to determine the technical effect achieved by the distinguishing features and how to determine the technical problem actually solved by the invention.

In recent years, an interesting phenomenon occurs when high-end slogans concerning examination reasoning, like “identification of inventive concept” and “overall consideration”, are always mentioned and, meanwhile, people still have an incorrect understanding of basic concepts of examination criteria as it can be seen from some examination decisions and court judgments. They ignore, for instance, the fact that the technical effect is generated by the distinguishing features, the technical problem shall be the one “actually solved”, and the technical problem solved is not determined in the “three-step method” stemming from the “problem-and-solution approach”, let alone the issue of “fragmented technical features” that is popular nowadays.

We are going to explain how to guarantee the correct and accurate implementation of the second step from the following three aspects.

3. Distinguishing technical features

(1) Division of technical features

We are always accustomed to conduct a comparison between the claims and the closest prior art in terms of technical features. Nevertheless, the term “technical features”, which we are quite acquainted with, is still an uncertain concept. Shall we divide technical features by comma, or categorize them according to names, positional relationship, connection and functional limitation of components? Another typical way is to screen the claims by the prior art sieve without dividing the technical features defined therein. All the features that are different from the prior art are drafted as the distinguishing features, which results in various comparative results of technical features so that the essence of the invention cannot be grasped, the correlation between technical features is neglected and the technical effect on the entire technical solution generated by the inter-related technical features cannot be known.

In recent years, to solve the aforesaid problems, the State Intellectual Property Office (SIPO) has placed emphasis on the identification of the inventive concept and the overall consideration of technical solutions, but it unfortunately fails to absorb the spirit of those examination criteria under the current examination framework, thereby affecting the implementation thereof. Some latest judicial judgments tend to go to the opposite extreme, stating that, when multiple distinguishing features exist, it is incorrect to seek teachings from several prior-art references since all the distinguishing features are certainly inter-related, in such a way to realize “overall consideration”. How can we compare the claims with the closest prior art? What is the relationship between the division of technical features in the claims and the overall consideration of technical solution?

In the light of the provisions as prescribed in the Guidelines, the technical solution refers to the collection of technical means that are adopted to solve a technical problem in observance of the laws of nature. Technical means is usually embodied by technical features. Accordingly, we are of the view that technical solution, technical means and technical features of the claim are three concepts at different levels.

The completion of an invention-creation often comprises the following links: an inventor realizes the existence of

some technical problem in the prior art and intends to find a solution to it. To overcome the problem the inventor forms in mind the general solution (commonly known as an inventive concept) based on the knowledge of prior art, scientific principles or empirical rules; and further, the inventor shall select specific technical means to carry out the general solution with an aim to put the inventive concept into practice, and the collection of technical means constitutes the technical solution of the invention-creation. In order to gain patent protection, it is also required to embody the technical means in the form of technical features and the collection thereof into the claims. In this sense, the technical features in the claims are the external manifestation of the technical solution of the invention-creation, whereas the inventive concept and technical means indicate the essential substance of the technical solution.

Moreover, the technical problem, inventive concept, technical means, technical features and technical effect are closely related to each other, and the overall consideration of technical solution is premised on the full understanding of the invention-creation in its entirety, which is conducive to clarify the relationship between those elements of the invention. As said in Commentaries of Lv Buwei on History, the inventive concept in the understanding of the invention plays the same role as an “outline” in the saying “a lucid exposition of an outline, a sharp definition of categories”. Thus, identification of inventive concept means to see through the appearance to perceive the essence.

We have studied the views of other national patent offices and China’s courts. For instance, according to the EPO Guidelines for Examination, if a distinguishing feature cannot realize its function and effect in the whole technical solution of the invention without another or several distinguishing features, it can be deemed that the distinguishing feature and other distinguishing features are mutually related and interacted. Technical features are regarded as a combination of features if the functional interaction between the features achieves a combined technical effect. In a book entitled Understanding and Application of Beijing High People’s Court’s Guidelines for Determination of Patent Infringement, it is given a definition of technical features, that is, a minimum technical unit or combination of units that can independently perform certain technical functions and produce a relatively independent technical effect. All the above provisions take into account the relationship between technical features.

Although the Guidelines provide no definition of technical means and technical features, we can find the following statements: the claims shall recite the technical features of an invention or utility model. The technical features may be either component elements that constitute the technical solution of the invention or the utility model, or the interrelations between the elements. In the light of relevant provisions and under the current examination practice, we define the technical means as follows: a minimum technical unit that can independently perform certain technical function, produce a relatively independent technical effect and solve a technical problem. The technical means is defined as “a minimum technical unit” for its non-divisibility. Once a plurality of technical features constituting the technical means is divided apart, the technical problem solved and the technical effect achieved jointly by the technical features would not exist any longer. Based on this, it is suggested that the distinguishing features should be determined in the following manners:

a. The technical solution of the invention-creation (including the patent application, as well as the closest prior art) shall be taken into comprehensive consideration along the route of inventive concept by determining technical means, technical features and technical effect, as well as their interrelationships.

b. Pursuant to the understanding of the invention-creation, the technical features in the claims can be divided according to the technical means they belong to.

c. When comparing the claims with the closest prior art, the technical features can be compared to each other according to the division of technical means so as to determine the distinguishing features.

(2) Three circumstances arise at the time of dividing technical features according to the technical means they belong to.

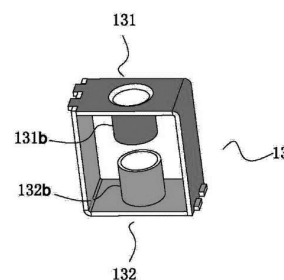
a. The technical means are mutually dependent and indispensable, and jointly solve the technical problem and achieve the same technical effect, so such technical features belong to the same technical means and the technical features constituting the same technical means should not be compared separately.

b. The technical means are independent from each other, perform different functions, solve dissimilar technical problems and achieve diversified technical effects, so such technical features belong to different technical means and shall be compared after being divided into different techni-

cal means.

c. Although the technical means are independent from each other, they usually perform identical or similar functions, and the technical effects achieved are simply superposed when the technical features are used for solving the same technical problem. Such technical features, despite belonging to different technical means, can be compared after being divided into different technical means or after being combined, which depends on specific situations.

For instance, the Decision No. 24576 is related to an electromagnetic water pump consisting of a cylindrical tube, a holder and an electromagnetic coil. There is a technical problem with the troublesome installation of the prior art holder. The patent solved the technical problem by means of four technical features: A. two L-shaped boards are clamped to each other; B. the left L-shaped board is integrally formed with a sleeve; C. the right L-shaped board is integrally formed with a sleeve; and D. a gap is reserved between the left and right sleeves after the two L-shaped boards are clamped to each other. None of the four features A, B, C and D alone can solve the technical problem, that is, the four features A, B, C and D are dependent on each other and need to work together to constitute the technical means for solving the technical problem. When determining the distinguishing feature, the technical features A, B, C and D shall be compared as a whole with the closest prior art. When seeking teachings, account shall be taken of whether the prior art in its entirety adopts technical means A, B, C and D to solve the technical problem of troublesome installation.



4. The technical effect achieved by the distinguishing features

The technical effect achieved by the distinguishing features serves as the factual basis for determining the technical problem actually solved by the invention. Incorrect determination of the technical effect will directly affect the determination of the technical problem actually solved by the invention, and possibly influence the final conclusion on assessment of inventive step. Determination of the technical effect in the “three-step method” is not simply a matter of fact-finding, and we think at least the requirements mentioned below shall be satisfied.

(1) The technical effect shall be achieved by the distinguishing features.

The technical effect is an external manifestation of technical innovations made by an invention with respect to the prior art, which decides that such a technical effect shall result from the incorporation of distinguishing features. If the description recites a technical effect, but the key technical means to achieve the technical effect of the invention is not defined in the claims, the technical effect cannot serve as the basis for determining the technical problem actually solved by the invention.

(2) The technical effect shall be real and objective.

The technical effect achieved by the distinguishing features can be proved by evidence or determined by those skilled in the art according to the description or prior art.

(3) The technical effect shall be all-round.

Any technical effect of the invention achieved by the distinguishing features can serve as the basis for determining the technical problem. All the technical effects objectively achieved by the distinguishing features shall be taken into account. Any negligence occurring at the time of considering the functions of the distinguishing features and the technical effects achieved thereby may result in that some contributions made by the invention may be overlooked.

(4) The technical effect shall be specific rather than general.

Attention shall be drawn to the technical effect of the whole solution achieved by the distinguishing features, which should be as specific and accurate as possible, rather than be described in a general manner. It is very likely that the technical effect described in a general manner has an impact on accurate determination of contributions made by the invention-creation, and may lead to a wrong conclusion when assessing the obviousness.

For instance, the Invalidity Decision No. 17554 is related to a method for producing an aluminium foil used in a high voltage anode of an electrolytic capacitor. The distinguishing features of claim 1 over the closest prior art are a. Mg: 0.002-0.003%, and other single impurity element \leq 0.001%; and b. there are 13 to 21 hot rolling passes, and the annealing treatment is conducted before rolling on the last pass in the cold rolling step. If the effect achieved by the distinguishing features a and b is broadly deemed as improving the performance of aluminium foils, it is easy to conclude that claim 1 lacks inventive step in view of the common knowledge in the art. However, as recited in the

description of the application, the distinguishing features improve the cube texture and specific capacitance of aluminium foils and there is no teaching in the prior art for solving the technical problem actually solved by the invention, which is determined according to the technical effect achieved, that is, claim 1 possesses inventive step.

(5) The technical effect shall be tenable within the scope of protection of the claims.

The technical effect achieved by the distinguishing features shall be tenable within the full scope covered by the subject-matter of claims, and only such technical effect can be used to determine the technical problem actually solved by the invention. If the claims cover a broader scope whereas the invention can only achieve the effect superior to the prior art within a small scope covered by the embodiments, such an effect superior to the prior art is not the effect achieved by the technical solutions of the claims.

(6) The technical effect shall be determined on the basis of the contents disclosed in the application documents as originally filed.

The first-to-file principle decides that if the applicant desires to prove the technical effect of the invention by experimental data filed after the filing date, such a technical effect shall be the one derivable from the contents disclosed in the description by those skilled in the art through reading the application documents, which means that the data filed later can only strengthen the technical effect already disclosed in the application documents or determined from the prior art by those skilled in the art. The technical effect that has not been disclosed in the application documents or cannot be determined from the prior art by those skilled in the art shall not be deemed as the technical contribution made by the invention by the filing date.

5. The technical problem actually solved by the invention

(1) The concept of the technical problem actually solved by the invention

The significance in determining the technical problem actually solved by the invention is explicit through analysing the function and importance of the second step. It is apparent that determination of the technical problem actually solved by the invention should not be missing in the “three-step method”; the technical problem actually solved by the invention reflects the technical contribution made by the inventor to the prior art and shall be the technical problem that can indeed be solved by the technical solution pro-

posed in the invention. As a result, the technical problem actually solved by the invention should not be expressed as “the technical problem to be solved by the invention”.

It is provided in the Guidelines that the technical problem actually solved by the invention, in this sense, means the technical task for improving the closest prior art to achieve a better technical effect. Thus, the technical problem actually solved by the invention is the one solved by incorporating the distinguishing features and therefore corresponds to the technical effect achieved by the distinguishing features of the invention and the technical problem actually solved by the invention is a technical task created on the factual basis of the technical effect, so the distinguishing features or technical means should not be written into the technical problem.

(2) Determination of the technical problem solved by the invention

The technical problem solved by the invention used for judging the contributions and values of the invention-creation shall be determined on the basis of objective facts. In general, we make the judgment on the basis of the technical problem to be solved by the invention as recited in the description. A judge, however, shall eventually put himself in those skilled in the art’s position to decide whether the technical solution of the invention can actually solve the technical problem, especially when the closest prior art is different from the background art described in the description or when the applicant makes amendments to the claims.

The following factors need to be taken into consideration in re-determining the technical problem actually solved by the invention:

a. Take accurate presentation of the invention’s contributions as a requirement

As there are no identical leaves in the world, we shall demonstrate the contributions made by the invention as appropriate by solving the “tailored” technical problem of each invention. The technical problem actually solved by the invention shall be accurately and properly determined according to the technical effect of the entire invention achieved by the distinguishing technical features, and the technical problem actually solved by the invention shall be compatible with the technical effect achieved by the distinguishing features.

b. Take the technical effect achieved by the distinguishing features as the basis

If a plurality of technical features belongs to the same technical means and jointly achieves some technical effect, the technical problem actually solved by the invention shall be determined according to the technical effect cooperatively achieved by the plurality of distinguishing features.

If a plurality of technical features respectively belongs to different technical means and achieves multiple technical effects independently, the technical problems actually solved by the invention shall be respectively determined according to the different technical effects achieved.

c. Take warning from hindsight

The technical concept and solution put forward in the invention for solving the technical problem or any implication of incorporating the technical means should not be included in the technical problem so as to avoid hindsight bias.

For instance, in the case relating to an application No.200580017046.3 (vehicle engine crankshaft), since the crankshaft manufactured in a conventional manner is eccentric, at least one counterweight is machined on the homogeneous crankshaft for the sake of counter balancing, which causes the crankshaft to be larger in size. To this end, the technical solution of the present invention is to make a non-homogeneous crankshaft structure of at least two different metallic components by means of powder metallurgy, wherein one of the metallic components constitutes the counterweight. If the technical problem actually solved by the invention is determined as forming a non-homogeneous crankshaft structure, claim 1 will be found invalid as lacking an inventive step on the grounds that it is a conventional technical means in the art to form a non-homogeneous member by way of powder metallurgy. The reason for it is that the key technical means “non-homogeneous” used for solving the large-size problem of crankshafts is included in the technical problem actually solved by the invention, which directly leads to a wrong conclusion on inventive step assessment. The technical problem actually solved by the invention shall be correctly determined as avoiding the increase in size of the crankshaft due to the requirement of counterweight.

(3) Special circumstances

If the closest prior art solves the same technical problem as that of the claimed invention, the technical effect achieved by the distinguishing features of the claimed invention would be substantially the same as that of the prior art, notwithstanding the different technical solutions they

adopt. The technical problem actually solved by the invention is just an alternative solution to an already solved problem. The alternative solution widens the route for solving the technical problem existing in the art, so the use of the alternative solution as the technical problem actually solved by the invention does not mean the inventive step of the claimed invention is under a death sentence.

VI. The third step of the “three-step method”: “Judgment on the presence of teaching”

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

The main purpose to establish the inventive-step provision is to encourage people to challenge the most valuable innovative tasks in exchange for exclusive rights, with an aim of ensuring that the “oil of interests” is selectively fuelled to the valuable “fire of creativity”. The core of the inventive-step judgment is to judge whether the contents of the claimed invention are the “fire of creativity”, which is, in essence, to evaluate the innovative value of the invention and contributions made thereby. The non-obviousness of the invention with respect to the prior art indicates that it has great value and makes notable contributions to the prior art. The third step of the “three-step method”, namely “to judge whether the claimed invention is obvious to those skilled in the art”, is a vital step that reflects the purpose for establishing the inventive-step provision. Whether the conclusion in the third step is correct will have a direct impact on the realization of the object of the provision. As a result, the third step is the most crucial step in the inventive-step judgment.

Since the third step not only includes the finding of facts related to the source of teachings but also law application and judging process on the basis of the factual findings, people are prone to subjective thinking, have more difficulties in drawing conclusions and may be encountered with more problems in the third step, as compared with the first and second steps.

2. Criteria for the judgment on the presence of teaching

It is provided in the Guidelines that in the third step of the “three - step method” to judge whether there is any “teaching” in the prior art, the examiner shall make a judgment, based on the closest prior art and the technical prob-

lem actually solved by the invention, as to whether or not the claimed invention is obvious to those skilled in the art.

As it can be seen from the Guidelines, the third step of judging the presence of “teaching” is based on the closest prior art determined in the first step so as to achieve the goal of determining the technical problem actually solved by the invention in the second step, and the examiner shall prejudge whether those skilled in the art can solve the technical problem solved by the inventor from the viewpoint of those skilled in the art, assess the contributions made by the invention and eventually draw a conclusion on whether the invention is obvious to those skilled in the art. The third step is a specific application of the first and second steps and realizes the object of the first and second steps. The closeness of the three steps decides that the judgment conducted in the third step shall be based on the factual findings confirmed in the first and second steps and is not a subjective presumption departing from the findings confirmed in the first and second steps.

The Guidelines further provide that in the course of judgment, what is to be determined is whether or not there exists such a teaching in the prior art, namely whether there is any teaching in the prior art to apply the distinguishing features to the closest prior art for solving the existing technical problem (that is, the technical problem actually solved by the invention), and if such teaching would motivate those skilled in the art, when confronted with the technical problem, to improve the closest prior art and thus reach the claimed invention.

The above provision has three meanings: first, teachings come from the prior art in its entirety, so account shall be taken of the prior art as a whole when seeking teachings; second, the process for seeking teachings is a goal-oriented conduct under the guidance of the technical problem actually solved by the invention; and third, only when teachings suffice to such an extent that those skilled in the art are “motivated” to improve the closest prior art can we say that the invention is obvious with respect to the prior art. Therefore, the source, guidance and extent of the teachings are the three aspects that should be paid attention to in the course of judging whether the invention is obvious.

3. Judgment on teachings

(1) Source of teachings

The final goal of making judgment on teachings is to evaluate the contributions made by the invention to the prior art as a whole, so the teachings source from the entire prior

art. From the formal perspective, the source of the teachings include the closest prior art that provides teachings, other prior art, and common technical knowledge and capabilities of those skilled in the art. It should be particularly noted that the source of the teachings does not include the contents of the application documents. In seeking teachings, the contents disclosed in the application documents must be excluded so as to avoid hindsight bias.

From the entity perspective, the teachings learnt from the prior art shall be determined in an objective, accurate, comprehensive and complete manner, and should neither be confined to the literal meanings of the words used in the prior art literature, nor be based on subjective assumptions or excessive interpretations. Instead, we should accurately get the technical information conveyed to those skilled in the art on the basis of the contents recited in the prior art. Attention shall be paid to the contents partially disclosed in the prior art and closely related to the claimed technical solution and the information contained in the entire prior art, including the information obtained in the context of a single prior art reference and disclosed in several references as a whole. Information relating to the technical features and technical means disclosed in the prior art shall be comprehended and understood comprehensively in the context of a corresponding technical solution as stated above.

The vastness and depth of the prior-art decides that even for the same problem, different prior-art references would provide a great variety of information from diverse angles. For instance, it may sometimes be recited that some technical means is defective under certain circumstances. The miscellaneous traces left by humans in pursuit of truth greatly increase the difficulty in capturing the teachings learnt from the prior art. What really matters is to accurately, not one-sidedly, find out the teachings conveyed to those skilled in the art by the entire prior art and whether such teachings can hinder those skilled in the art from being motivated to incorporate the technical means. It would be too naive to hold a negative attitude towards the formation of motivations just because of such information.

(2) Guidance of teachings

The process of seeking teachings by those skilled in the art is a goal-oriented search under the guidance of the technical problem actually solved by the invention. The technical information disclosed in the prior art can provide teachings only when it is reasonably associated with the technical problem actually solved by the invention and

brings about inspiration for solving the technical problem.

In the course of seeking teachings under the guidance of the technical problem actually solved by the invention, attention shall be paid to whether the prior art discloses the corresponding technical feature, basic attributes and functions thereof, the role and effect of the said technical feature in the prior art and the relationship between the said technical feature and other technical features in the prior art so as to avoid the circumstances where “only features count”.

When determining the role and effect of the corresponding technical feature in the prior art, we should, just like treating a patent application, have a solid and in-depth understanding of the technical features and accurately divide the technical features contained in the prior-art solution while bearing in mind the technical concept of the prior art reference, so as to further judge the actual role and effect of the corresponding technical feature in the entire technical solution. During the judging process, it is very likely to result in a biased conclusion if we judge the role and effect of the technical feature merely according to the intrinsic function of the technical feature *per se*.

(3) Extent of teachings

The concept “motivate/motivation” is introduced into the Guidelines for judging whether the teachings from the prior art that are relevant to the technical problem actually solved by the invention in terms of contents have constituted a technical motivation to those skilled in the art, to be specific, the teachings shall suffice to such an extent that those skilled in the art are “motivated” to improve the closest prior art.

How can we judge whether those skilled in the art are “motivated” to make an improvement?

Generally speaking, it is firstly required that the closest prior art should be objectively faced with the technical problem actually solved by the invention; those skilled in the art can realize not only the existence of the technical problem but also the practical need for solving the same according to the prior art or the knowledge and capabilities they have. Due to such a practical need, the prior art provides a teaching in incorporating corresponding distinguishing technical features to solve the technical problem, and those skilled in the art have a reasonable expectation of successfully solving the technical problem by incorporating the corresponding distinguishing technical feature in view of the analysis of the prior-art teachings. Only in such a manner

can those skilled in the art be “motivated” to make an improvement.

The above essential elements constitute the necessary requirements for being “motivated”. Lack of any of them may render those skilled in the art hardly “motivated”. To be specific, if the closest prior art is selected improperly for having no relevance to the technical problem actually solved by the invention at all, it will certainly affect the subsequent assessment. Even if in the step of judging whether there is any teaching in the prior art, it would not be hard to find that the motivation was nipped in the bud. If the relevant technical problem still exists but will not be realized until the completion of the invention, then those skilled in the art would not realize the existence of the technical problem prior to the filing date of the invention and may be in trouble in generating intrinsic motivation for improvement without the guidance of the technical problem. If the prior art fails to provide necessary teachings in regard to the technical concept and technical means used for solving the technical problem, those skilled in the art, though full of lofty ideals and great ambitions, “cannot make bricks without straws”. If those skilled in the art have no reasonable expectation of success in achieving the technical effect by incorporating the corresponding distinguishing technical feature, they whoever are rational might go on planning and wavering, rather than be immediately motivated to embark on creating an invention purposefully and initiatively.

“Reasonable expectation of success” herein refers to a state in which those skilled in the art can rationally predict that the corresponding technical solution is likely to succeed based on the knowledge and capabilities of their own, through logical analysis and finite times of experiments, after analysing the technical feasibility and the probability of success. Different from the technical feasibility and certainty of success (namely, a certain success), the reasonable expectation of success is an intermediate state between the technical feasibility and the certainty of success.

For instance, the Invalidation Decision No. 22791 is directed to a complex or salt comprising tenofovir disoproxil and fumaric acid. D1 relates to tenofovir disoproxil and the use thereof. D2 relates to pharmaceutically acceptable salts of a tricyclic pyrazole fatty amine compound (which, just like the compound of the present patent, is an amine compound and alkaline), which mentions that fumarate is especially suitable for medical use due to its stability.

The opinions of the patentee are primarily focused on

the following: those skilled in the art have no motivation to make tenofovir disoproxil into fumarate on the grounds that (a) whether the technical problem that poor stability of tenofovir disoproxil results in difficulty in production exists and whether those skilled in the art can realize the technical problem since D1 fails to explicitly mention that tenofovir disoproxil is an oily substance; (b) the structural difference between the compounds of D2 and the compounds of the present patent leads to discrepancy in alkaline, and some treatise once recited that salification of weak acid amines or weakly basic amines is not recommended, and the inventor stated that “as for a free base salt, a stable salt in solid state can be formed only when the difference between the dissociation constant of the free alkaline and that of the free acid is usually greater than 3”, whereas the fumaric acid in the present patent is a weak acid, and the difference between the dissociation constant of the fumaric acid and that of the free alkaline is less than 3. Under such circumstances, shall we still deem that the prior art provides a teaching concerning the resolution of the stability problem? (c) Moreover, a drug compound salt is still uncertain without being proved under experiment. Will those skilled in the art really attempt to form the fumaric acid from tenofovir disoproxil so as to solve the stability problem?

In regard to the above disputes, the PRB held that since D1 has explicitly recited that tenofovir disoproxil has been under clinical trials, it indicates that the basic performance of tenofovir disoproxil, as well as the stability problem thereof, can be known by those skilled in the art, and the pursuit of stability is certainly a focus of pharmaceutical research and development. Additionally, the materials related to the experiment conducted prior to the filing date as submitted by the patentee just made salts by the acid and free base, the dissociation constant between which is less than 3. It is obvious that the experiment is not affected by the view on the difference between the dissociation constants. In particular, D2 clearly provided a teaching of making salt from the reaction between a compound having similar physical and chemical properties and fumaric acid so as to improve the stability of the salt, and the requestor also presented evidence in relation to common knowledge, indicating that a weak base drug shall be preferably reacted with an organic acid, including a fumaric acid, to form a salt, which is sufficient to demonstrate that the evidence submitted by the patentee is unable to prove that a universal understanding has been formed among those skilled in

the art prior to the priority date of the present patent. In this case, the range of choices about conjugated acid is strictly limited. At first, it can be determined that the above diversified views in the prior art would not constitute an obstacle in generating a motivation. Besides, as far as those skilled in the art are concerned, a basic idea formed on the basis of the common knowledge in the art and in comprehensive consideration of several prior art references is that such compound can usually be reacted with multiple organic acids (including a fumaric acid) or inorganic acids to make salts. Such a salt-making process has a positive effect on the stability. As a result, the success in achieving the technical effect by making salt from the reaction between the compound of the present invention and the fumaric acid can be reasonably expected with no need of verification through experiments. When realizing the urgency of enhancing the stability and being inspired by the reasonable expectation of success under the teaching of the prior art, those skilled in the art will obviously be motivated to manage to improve the closest prior art.

The Decision on Re-examination No. 51405 relates to an apparatus for producing thermos-fusible adhesive bags, which successfully solves the problem that the sleeve of the adhesive bag is prone to be damaged by a separator element. The inventive concept of the present patent is to configure the separator element to move circumferentially without changing the angular position thereof with respect to the product movement path, that is, the separator element is circumferentially moved at a constant angular position, which is embodied by a series of distinguishing features. D1 and D3 realize the cut-off function respectively by a circumferential movement and a linear movement with a constant angular position, but they both damage the sleeve of the product. The present invention is faced with the same technical problem as D1 and D3, and judging from the technical features, the present invention can be formed simply by combining the circumferential movement of D1 with the linear movement of D3. Since those skilled in the art cannot determine if the cutting device of D3 can solve the technical problem of damaging the outer sleeve of the squeezed product by the cutting device, a reasonable expectation of success in solving the problem of sleeve damage by combining D1 with D3 under the teaching of the prior art and such a motivation does not exist at all.

VII. Conclusion

To conclude, the inventive-step provision is most relevant to the tenet of the patent system and can always lead the innovation-oriented way as being capable of distinguishing the extent of innovation, and the accurate application of those assessment criteria in the approval and affirming steps serves as a wind vane of national policies in order to enhance the quality of patent applications. Under the current situation, in order to enhance the quality of patent applications by strictly conducting patent examination, efforts shall be made to further increase the precision of thinking in the course of inventive-step assessment, make the assessment result as objective as possible for the sake of better stimulating technological innovations and boosting economic development and social progress. This article is based on the common issues in examination practice with the focus on the principle of the “three-step method” so as to provide a more practicable guidance for each step under the framework of the Guidelines. ■

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