

Application of Inventive Concept in Inventive Step Assessment Based on the “Restaurant System” Case

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Introduction

In the “restaurant system” invention patent invalidation case (hereinafter referred to as “the present case”), the patent relates to a restaurant system. In a full-service restaurant, customers are served by waiters/waitresses, which wastes human labor and time, and in a self-service restaurant, customers have to fetch food themselves, which causes inconvenience and is less appealing. To solve these problems, there is provided a customer-friendly restaurant system with high-quality service and low cost. The inventive points include, among other things, a transport system comprising a rail system for transporting meals and/or beverages by means of gravity from the working area to the customer area, in such a way that when the food such as meals and beverages is cooked or ready in the working area, it is placed on the rail so as to be slidably conveyed to the customers’ tables by means of gravity. Thus, waiters/waitresses do not need to provide the catering service any more. Nor do customers have to fetch food themselves. The above problems of the existing restaurant system are solved.

The present case relates to a PCT international patent (hereinafter referred to as “the present patent”) entering into the Chinese national phase, which is owned by HeineMack GmbH (hereinafter referred to as “HeineMack”). The patent families of the present patent have been granted in Europe, the United States, South Korea, etc.

HeineMack has opened “Rollercoaster Restaurants” where food is delivered by way of rollercoaster tracks via

gravity around the world since 2007. The present patent is one of a series of “Rollercoaster Restaurant” patents owned by HeineMack, and serves as the core patent demonstrating the design idea and technologies of such restaurants. On the other hand, “weightless restaurants” with a similar concept have been gradually opened in recent years. Accordingly, disputes over such restaurant patents grow as the number of these novel restaurants increases. The present case is one of the multiple invalidation cases between Weightless (Beijing) Catering Management Co., Ltd. (petitioner) and HeineMack (patentee). The patentee filed a request for adjudicating the administrative patent infringement case with the Beijing Intellectual Property Office, and filed lawsuits claiming infringement and unfair competition in Beijing, Shanghai, Xi’an, Suzhou and Shenzhen.

In June 2019, the China National Intellectual Property Administration (CNIPA) and the Beijing Intellectual Property Office jointly heard the case and issued the Invalidation Decision No. 41958 to uphold the validity of the present patent on the basis of the amended claims submitted by the patentee.

In the present case, Exhibit 1 discloses a means for purveying food, comprising an elevated platform, which is higher than a service platform, for preparing food, and a chute disposed between the elevated platform and the service platform. The prepared food is placed on the chute to be purveyed to the service platform by means of gravity, and then taken out by a waiter/waitress from the service platform to customers sitting around. Exhibit 2 discloses a railway-like track system. By way of comparison, it is found that one of the distinguishing features between the present

patent and the closest prior art Exhibit 1 lies in that although they both adopt a track system that makes use of gravity, the technical solution of the present patent defines that the track system extends to customers' tables so that food can be directly delivered to the tables along the track by means of gravity, whereas Exhibit 1 still transports food to the service platform, and then the food is removed by a waiter/waitress from the service platform to the customers' tables.

Since the solution of the present patent is so close to that of Exhibit 1, the assessment of inventive step is the focal and difficult issue in this case. Finally, the Invalidation Decision No. 41958 took comprehensive consideration of the contents of the present patent and Exhibit 1 in terms of the technical problem, technical means and technical effect, as well as the technological development trend and current situations, and then made analysis and judgment on inventive step based on the distinguishing features under the guidance of the inventive concept.

From the perspective of examination method, the present case shows the CNIPA's great efforts in exploring and attempting several examination modes in a bid to boost the connection between administrative validity proceedings and infringement proceedings, shorten the time required for patent protection, and unify applicable standards. From the perspective of examination results, the present case demonstrates China's equal protection provided for the legitimate interests of Chinese and foreign right holders, and China's determination and approach in strengthening "equal protection" of intellectual property rights and creating a good business environment. From the perspective of judging criteria, the present case demonstrates the application of the inventive concept in the assessment of inventive step, that is, drawing a conclusion on inventive step by judging the difference in inventive concept between an invention and the prior art after comprehensive consideration of the technical problem, technical means and technical effect thereof, as well as the technological development trend of the catering industry.

I. Identifying inventive concept and comparing an invention with the prior art in terms of the inventive concept are in line with the legislative intent of the inventive step clause

The original intention to establish a modern patent system is to recognize a patent applicant's technical innovations and contributions by providing it or him with a monopoly right within a certain period of time and scope, for the purpose of encouraging innovations and stimulating social and technological development.

During the hundreds of years after the establishment of the patent system in countries around the world, the patent system gradually evolved into a complete system with "novelty, inventive step and practical applicability" as the core requirements of patentability through continuous development and improvement. However, inventive step as the core requirement of patentability is not inherent to the patent system. When the patent system was just established, the scientific and technological level of the society was extremely low, and merely applicability and novelty were required for obtaining a patent. With the constant advancement of science and technology, excessive patent monopoly and protection due to low patentability requirements have hindered scientific and technological innovations and development in the society, and been gradually incompatible with the original intention of the patent system to encourage innovations and stimulate technological progresses. Therefore, in addition to novelty and practical applicability, inventive step emerges as a new requirement of patentability.

Although the descriptions and judging methods of the "inventive step" requirement vary in various countries, they all tend to adopt "non-obviousness" as the basic criterion, requiring that an invention must be non-obvious over the prior art, which means when creating the invention, the inventor shall make certain efforts that reflect human wisdom to the extent of making technological progresses. It can thus be seen that the legislative intent of the inventive step clause is to measure the technological contributions made by an invention and provide an exclusive monopoly right for the invention with certain technological contributions.

An inventive concept generally refers to an idea concerning technical improvement proposed by an inventor in search of a solution to the technical problem in the process of completing the invention¹. In the patent application process, the inventor's idea concerning technical improvement is usually demonstrated in the form of a technical solution that can solve the technical problem by making use of natural laws. In the patent grant and validity proceedings, the patent administration department considers whether a patent possesses an inventive step as one of the conditions

necessary for patentability. Thus, the implementation of the modern patent system is indispensable from the identification and understanding of the “inventive concept”. Providing an exclusive monopoly right for an invention with certain technological contributions essentially requires comparing the invention with the prior art in terms of inventive concepts and making relevant assessment.

II. Identifying inventive concept and comparing an invention with the prior art in terms of the inventive concept are in line with the common spiritual connotation of inventive step assessment methods of various countries

With the establishment of the inventive step clause, the methods for assessing an inventive step have constantly developed and improved. Different from the assessment of novelty and practical applicability which is relatively objective, the assessment of inventive step is much subjective. In order to render the assessment of inventive step more objective and consistent, countries in the world are making unremitting efforts to explore effective assessing methods that meet the legislative intent.

As far as the United States is concerned, the assessment of inventive step was originally a completely subjective and vague assessment criterion called “inspiration of genius”. Having undergone the Graham principle, the teaching - suggestion - motivation (TSM) test and the KSR case, the method for assessing an inventive step is formed to include the following major steps so as to determine obviousness: (1) determining the scope and content of the prior art; (2) ascertaining the differences between the claimed invention and the prior art; and (3) analyzing the capacities of those skilled in the art. In the last step, seven judging criteria for determining obviousness, including TSM test, are adopted.² The U.S. Manual of Patent Examining Procedure (MPEP) meanwhile emphasized that in order to ascertain the differences between the claimed invention and the prior art, it is necessary to explain the claimed invention and the prior art and give comprehensive consideration to them separately. In addition, in the method for assessing an inventive step in the United States, technical inspirations origi-

nate from a wider range of sources. Meanwhile, secondary indicia such as “evidence of commercial success, long-felt but unsolved needs, and failure of others” shall be included into the background of invention sources.

The European Patent Office (EPO) usually adopts the “problem-solution approach” to assess an inventive step. The EPO’s Guidelines for Examination stipulate that in order to assess an inventive step in an objective and predictable manner, the so-called “problem-solution approach” is applied, which includes three main stages: (i) determining the “closest prior art”, (ii) establishing the “objective technical problem” to be solved, and (iii) considering whether or not the claimed invention, starting from the closest prior art and the objective technical problem, would have been obvious to the skilled person.³ According to the Case Law of the Boards of Appeal, the aforementioned stage (ii) is further divided into the following steps: (b) assessing the technical results (or effects) achieved by the claimed invention when compared with the “closest state of the art” established and (c) determining the technical problem to be solved as the object of the invention to achieve these results.⁴ The EPO’s Guidelines for Examination and the Case Law of the Boards of Appeal also emphasize that the invention claimed must normally be considered as a whole. When a claim consists of a “combination of features”, it is not correct to argue that the separate features of the combination taken by themselves are known or obvious and that “therefore” the whole subject matter claimed is obvious.⁵ It is also pointed out that secondary indicia of this kind are only of importance in cases of doubt, i.e., when objective evaluation of the prior art teachings has yet to provide a clear picture. Indicia are merely auxiliary considerations in the assessment of inventive step.⁶ The EPO’s Guidelines for Examination further indicate that while the claim must in each case be directed to technical features (and not, for example, merely to an idea), in order to assess whether an inventive step is present, it is important for the examiner to bear in mind that an invention may, for example, be based on the following: (ii) the arrival at an insight into the cause of an observed phenomenon (the practical use of this phenomenon then being obvious)⁷, which shows that attention shall be paid to the cause of the technical problem in the assessment of inventive step.

In China, the following three steps are followed to determine whether a claimed invention is obvious as compared with the prior art: (1) determining the closest prior art; (2) de-

termining the distinguishing features of the invention and the technical problem actually solved by the invention; and (3) determining whether or not the claimed invention is obvious to those skilled in the art.⁸ This is the “three-step method” as we usually call it. Meanwhile, the CNIPA’s Guidelines for Examination also enumerate other factors to be considered in the assessment of inventive step, which are identical to secondary indicia as mentioned by the USPTO and EPO.

By comparing the methods for assessing an inventive step adopted by the USPTO, EPO and CNIPA, it is easy to find that although their methods for assessing an inventive step have respective characteristics, there exists no substantial difference between those methods in terms of the overall assessing rationale for the following reasons: (1) they all require the subjects who conduct the assessment to be those skilled in the art; (2) they all emphasize that the claimed invention and the prior art must respectively be considered as a whole; and (3) they all adopt substantially the same assessing rationale, namely, they all objectively analyze the improvement of the invention in an attempt to reconstruct the invention on the basis of the prior art as a whole. However, the steps for assessing an inventive step in these countries are different and flexible to some extent.

By analyzing the commonness of the methods for assessing an inventive step adopted by these countries, it can be seen that the spiritual connotation thereof lies in that the invention is compared with the prior art so as to analyze the improvement of the invention according to objective and comprehensive understanding of the invention and the prior art from the perspective of those skilled in the art, in such a way to try to reconstruct the invention on the basis of the prior art as a whole. The judgment on obviousness of the invention is made based on whether the prior art renders those skilled in the art sufficiently motivated to form the invention.

The common spiritual connotation of the methods for assessing an inventive step of those countries and the basic notion of inventive concept are naturally connected and harmoniously unified. The former is the process in which those skilled in the art try to obtain an invention within the scope of their knowledge and capabilities, and the latter is the key contents of the invention created by the inventor and embodied in the application documents. Therefore, accurately identifying an inventive concept and comparing an invention with the prior art in terms of the inventive concept

play an indispensable role in the correct application of the method for assessing an inventive step.

III. Considerations and basic rationale for identifying inventive concept and comparing an invention with the prior art in terms of the inventive concept

Application document is the carrier of an invention and mainly functions to objectively demonstrate the contents of the invention. The process of demonstrating the contents of the invention is also the process of presenting an inventive concept. The inventive concept is abstract, while the invention expressed in the application document is specific and detailed. Thus, the assessment of inventive step is premised on an abstract inventive concept understood and identified by those skilled in the art according to specific and detailed application document.

As far as an invention-creation is concerned, the technical problem is the cause of the invention-creation, the technical effect is the result of the invention-creation and the technical solution is the specific process of solving the technical problem and achieving the technical effect. Therefore, regarding identification of the inventive concept based on the application document, it is necessary to objectively and comprehensively understand the cause and effect of the invention-creation from the perspective of those skilled in the art. Comprehensive consideration shall be given to the cause of the technical problem, the way to make technical improvements and the confirmation of the technical effect, which are also necessary in applying the method for assessing an inventive step, i.e., applying the “three-step method”. Comparison and judgment shall be conducted on the basis of the inventive concept.

First, the cause of the technical problem: the technical problem to be clarified for identifying an inventive concept refers to the technical problem to be solved as asserted by the inventor in the application document. Accurate ascertainment of the technical problem based on the application document is the prerequisite for extracting the inventive concept. Under normal circumstances, an applicant will clearly indicate the technical problem to be solved in the application document. However, those skilled in the art should not ascertain the technical problem merely according to the contents recited in the application document. It is neces-

sary to delve into the cause of the technical problem, and take account of whether those skilled in the art have adequate knowledge and capabilities to raise the technical problem. The technical problem *per se* is usually clearly recited in the application document, or can be derived from the background art recited in the application document. However, as to whether those skilled in the art have adequate knowledge and capabilities to raise the technical problem, understanding and consideration of the overall development conditions, development process and development trend of the prior art is indispensable. Only with adequate knowledge of the development conditions and process can we objectively judge whether there exist clear goals and strong practical demands to motivate those skilled in the art to improve the prior art and clarify the improvement direction. If the technical problem of the invention does not conform to the development conditions or trend of the prior art, or the development trend and common demands of the relevant prior art are opposite to or against the technical problem of the invention within a long time period before the filing date of the invention, those skilled in the art do not have adequate knowledge and capabilities to raise the technical problem.

In the Invalidation Decision No. 41958, full consideration is given to the impact of the development of the prior art on the identification of the inventive concept and comparison of the invention with the prior art in terms of the inventive concept. The Decision analyzes the development history and objective demands of the catering industry. The catering industry has been substantially relying on waiters/waitresses to provide human services since its emergence, which is decided by the nature of the service industry and common demands on the industry. For a long time, people tend to dine in restaurants mostly for the sake of the convenience and comfort provided by such a service. Under such a demand, it is hard for people to be motivated to eliminate the human services. Even though self-service restaurants and revolving restaurants came into being later, waiters/waitresses are still required to place food at a pick-up area or on a conveyor belt. In consideration of the development process and conditions of the catering industry, those skilled in the art realize that the technical problem and improvement of the present patent are deviated from the conventional demand and development direction in the field, such that the inventive concept of the patent in suit is fundamentally different from that of Exhibit 1 in terms of the moti-

vation.

Second, the ways to make technical improvements: first of all, to understand and know how to implement the technical means of the invention is usually the primary contents of the application document. Thus, it is necessary to understand the application document, including claims, as a whole from the perspective of those skilled in the art so as to make an objective and comprehensive judgment on that basis and pay attention to the internal links between technical features. Next, in the process of seeking and comparing technological improvements, it is necessary to compare the technical solution of the invention with the prior art to arrive at the improvements made by the invention, thereby determining the technical problem actually solved by the invention. This is the second step of “determining the distinguishing features of the invention and the technical problem actually solved by the invention” in the “three-step method”. In practice, distinguishing features are derived by comparing the features of the technical solution of the claimed invention with those of the closest prior art. Thus, people are prone to paying attention to partial differences and ignoring the entire technical solution, such that technical features are fragmented, which may affect the accuracy of inventive step assessment. To avoid this situation, those skilled in the art should, under the guidance of the inventive concept, analyze the technical effect that the distinguishing features can achieve in the entire technical solution and then determine the technical problem to be solved. The distinguishing features of the invention shall be considered together with the technical problem actually solved thereby.

In the Invalidation Decision No. 41958, the examiners analyzed the distinguishing features of the present patent over Exhibit 1 and concluded that they are substantially different in terms of the technical problem actually solved and the technical means adopted. The present patent directly delivers meals and/or beverages from the working area (kitchen) to or at the customers’ tables without waiters/waitresses, which not only solves the problem of high labor and time costs due to the existing service system’s high reliance on human labor, but also solves the problem of inconvenience and unpleasant experience caused by the cancellation of human services (such as in self-service restaurants). Although Exhibit 1 discloses a solution of using a rail system to deliver food, it intends to solve the problem of how to provide catering service in a limited space like exhibitions or trade fairs. Thus, Exhibit 1 solves the problem of

space utilization by arranging a fixed track between the working area where food is prepared and the service counter. It provides no relevant teaching or inspiration for setting up a complicated track system between the working area and dining tables that occupy a larger area and are not located at fixed places, i.e., it provides neither relevant teaching nor inspiration for extending a track to dining tables. Furthermore, those skilled in the art cannot conceive of adopting the technical means of the patent in suit to solve its technical problem on the basis of Exhibit 1.

Third, the confirmation of the technical effect: in the process of identifying the inventive concept, the pursuit of technical improvement ideas is a positive search for the inventive concept, and the confirmation of the technical effect is a reverse and objective restoration of the inventive concept. Those skilled in the art verify whether the technical problem as asserted by the inventor is addressed by analyzing the technical effect in view of the technical contents disclosed by the application document as a whole.

The technical problem as asserted by the inventor is the starting point of the invention created by the inventor, and the technical effect corresponding to the technical problem is the end point of the invention. Therefore, those skilled in the art can figure out the entire inventive concept of the inventor according to this clue. It shall be noted that those skilled in the art shall make an objective judgment on the technical effect as asserted by the inventor in view of the overall conditions of the prior art. The actual fact is that the technical effect achieved by the invention complies with the asserted technical effect, or the technical effect achieved by the invention is not up to the asserted technical effect, or even the technical effect achieved by the invention exceeds the asserted technical effect. As for the technical effect that is unpredictable according to the overall condition of the prior art, it is necessary to temporarily not consider the technical effect and related content in the process of identifying the inventive concept.

In the Invalidity Decision No. 41958, the examiners analyzed and compared the technical effects achieved by the invention and the prior art document, thereby finding them different. In view of the development and current situation of the dining mode, it can be seen that there is little room for improvement in the dining mode. With the help of the design and application of the track system, the patent makes customers satisfied with the catering service with reduced manpower, and meanwhile provides a novel dining

experience and different dining culture. The present patent relates to a new application of a mechanical structure in the catering industry and makes good balance between the dining environment, service, labor cost and dining experience, which is the technical effect that cannot be achieved by Exhibit 1.

IV. The relationship between the inventive concept and the “three-step method”

The “inventive concept” is neither a new method for assessing an inventive step nor an assessing method independent from or even opposite to the “three-step method”. Instead, it is the legislative intent of the inventive step clause and the original intent of the assessing method. Although the CNIPA’s Guidelines for Examination do not set forth clear provisions on “the identification of the inventive concept”, we shall bear it in mind as an examination notion so as to provide guidance throughout the process of inventive step assessment. Especially when there is difficulty in assessing an inventive step by directly or merely applying the three - step method just as in this case, objectively speaking, the means to solve the problem is simple and seems easy, and consideration shall be given to whether inventive concepts of the invention and the prior art are identical or similar to each other. The inventive step assessment is a “judgment with hindsight”, and is inevitably subjective to some extent. This requires examiners to make analysis and judgment based on the prior art before the filing date of the invention from the perspective of those skilled in the art, rather than make a subjective judgment based on whether the technical means is “easy or not”.

The “three-step method” is a method for assessing inventive step put forward to prevent the subjectivity of the assessment. Although it is not the only method, it is an objective and feasible means that has been tested in practice and wins global recognition. During the application of the “three-step method”, examiners shall, on the premise of understanding and identifying the inventive concepts of the invention and the prior art, select the prior art that is closest to the invention, objectively determine the technical problem actually solved by the invention according to the distinguishing features of the invention over the closest prior art, and further decide whether the prior art as a whole provides

a teaching that is sufficient to motivate those skilled in the art to apply the technical means characterized by the distinguishing features to the closest prior art to obviously arrive at the technical solution of the invention and thereby address the technical problem actually solved by the invention. We have repeatedly stressed that “the invention and the prior art shall be considered as a whole” in the process of assessment of inventive step. However, in practice, each step of the “three-step method” is carried out on the basis of comparison of “technical features” and the inventive concept reflects the inherent connection of these technical features. Thus, only by internalizing the inventive concept into each step of the assessment of inventive step is it possible to see the wood for the trees and prevent fragmentation of technical features. Moreover, in actual practice, the term “inventive concept” or its explanation does not necessarily appear in the decisions in a large number of cases. But in principle, the assessment of inventive step is made on the premise of identifying the inventive concept and regarding the invention as a whole.

Conclusion

Technical problem, technical solution and technical effect are “three elements” for identifying and comparing inventive concepts and play a crucial role in practice. In the assessment of inventive step, the identification of the inventive concept is the premise and starting point of the assess-

ment of inventive step, the basis for seeking the related prior art and clarifying the substantial improvement of the invention over the prior art, and meanwhile the goal of reconstructing an invention. The assessment of inventive step based on an accurately identified inventive concept guarantees the correct application of the method for assessing inventive step and consistent implementation of examination criteria. ■

The author: Examiner of the Patent Reexamination and Invalidation Department of the Patent Office of the CNIPA

¹ The Patent Reexamination Board of the CNIPA. *Case Studies—Guidance for Typical Patent Reexamination and Invalidation Cases* (2018 edition). Intellectual Property Publishing House.

² USPTO. MPEP (9th edition, revision, last revised June 2020), Section 2141.

³ The EPO’s Guidelines for Examination (November 2019), Part G, Chapter VII, 5.

⁴ The Case Law of the Boards of Appeal (9th edition, July 2019), Part I, Chapter D, Section 2.

⁵ See supra note 3, Part G, Chapter VII, 7.

⁶ See supra note 4, Part I, Chapter D, Section 10.

⁷ See supra note 3, Part G, Chapter VII, 9.

⁸ The CNIPA’s Guidelines for Examination (which was promulgated on 1 February 2020). Intellectual Property Publishing House. Part II, Chapter 4, Section 3.2.1.1.

The 20th TRIPO Heads Meeting Held

On 1 December 2020, the 20th TRIPO Heads Meeting was held online, attended by CNIPA Commissioner Shen Changyu, JPO Commissioner Kasutani Toshihide of Japan and KIPO Commissioner Kim Yong Rae of the Republic of Korea. The heads reviewed and commended the results of cooperation produced over the past year and exchanged ideas for future work.

Dr. Shen Changyu said that the trilateral relationship among the CNIPA, JPO and KIPO plays an important role in promoting regional innovation and economic and trade cooperation. Since its establishment in 2001, achievements were gained among the three offices in patent examinations, designs, trademarks, literature data exchanges, information automation, and patent re-examinations.

Mr. Kasutani Toshihide and Mr. Kim Yong Rae also made positive remarks on the achievements of the three offices since the outbreak of the COVID-19 this year, believing that increasingly deepened cooperation in IP work has bolstered economic and trade development among the three countries.

At the meeting, the three offices briefed each other on the latest progress in IP work of their own respective countries, and had in-depth discussions on human resources, trademarks, re-examinations, designs, the TRIPO user symposium and other content. The three offices also decided that the 21st TRIPO Heads Meeting would be hosted by the CNIPA in 2021.

Source: CNIPA