

Scrutiny of Examination of Means-plus-function Claims

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Introduction

The aim of the patent system is to exchange disclosure for monopoly. Monopoly entails disclosure. The “right” a rightholder is granted within the patent system is defined by the disclosure contained in the description, and what the rightholder “claims” is determined by the terms of the claims. Examination of the claims covers examination of the relationship between the claims and the description (e.g. whether the claims are supported by the description) and that of the claims *per se* (e.g. whether the claims possess novelty and inventiveness). All that are examined are unexceptionally whether the “claims” fall within “disclosure”, and the examination of means-plus-function claims is no exception.

I. Legal practice of examination of means-plus-function claims in China

In the practical examination, claims containing technical features showing function or effect or result are generally believed to be means-plus-function claims. In the Chinese Patent Law and the Implementing Regulations thereof are not set forth any provisions in this regard. The means-plus-function claims are described only in the Guidelines for Patent Examination, and limited only to product claims. The provision reads: “usually, for product claims, features of function or effect shall be avoided as much as possible to be used in defining the invention. It is only when a certain technical feature cannot be defined by a structural feature, or it is more appropriate to be defined by a feature of function or effect than by a structural feature, and the function or effect can be directly and affirmatively verified by experiments or operations as stated in the description or by customary means in the art, that definition by features of function or effect in a product claim is permissible”.¹

It is further provided in the Guidelines for Patent Examination that said technical features defined by function should be construed to embrace all the ways or modes to perform said function. That is, they include not only the corresponding modes to perform said function in the description and the equivalent thereof, but also other existing ways or modes to perform said function and those coming into being after the date of filing (or priority).

Regarding the means-plus-function claims, it is stressed in the Guidelines for Patent Examination that examination should be made as to whether the functional definition is supported by the description. If the function defined in the claims is performed in a way specified in the embodiment of the description and a person skilled in the art is not clear that said function can be performed in an alternative way as mentioned in the description², or he has reason to doubt that one or several modes contained in the functional definition can not resolve the technical problem the invention or utility model is intended to resolve and achieve the identical technical effect, then functional definition is not admissible in the claims that covers said alternative mode or those that can not resolve the technical problem the invention or utility model is intended to. Besides, if the claims only fuzzily describe that other alternative modes are likely to be applicable, but the person skilled in the art is not clear what the alternative mode is all about or how it is applied, then functional definition is disallowed in the claims.

Of course, determining that means-plus-function claims are supported by the description does not mean that an examiner is required to examine all the modes performing said function. Rather, he should find out whether the person skilled in the art is clear about other modes, other than those specified in the description, that are capable of performing said function, resolving said technical problem, and achieving identical technical effect³.

It is worth noting that decisions on patent validity and

those on patent infringement are made respectively by the patent administrative authority and the people's courts. In the Supreme People's Court's Interpretation of Several Issues Relating to Application of Law to Trial of Cases of Dispute over Patent Infringement effective as of 1 January 2010, the means-plus-function claims are construed to be the specific modes described in the description and appended drawings and the equivalents thereof.

II. Legal practice of examination of means-plus-function claims in the United States

In the United States, to the examination of the relations between the claims and specification, paragraph two of 35 U.S.C. 112⁴ and paragraph six of 35 U.S.C. 112⁵ apply. The former is the universal principle applicable to all claims, that is, the claims should be based on the specification, and clearly define the subject matter of the invention that is capable of resolving the target technical problem. When the protection scope of means-plus-function claim covers a technical solution that cannot resolve the target technical problem⁶, or a person skilled in the art is not clear how many modes there are to perform said function⁷, such claims are held to be contrary to the provision of paragraph two of 35 U.S.C. 112. This provision is somewhat similar to the provision of Article 26, paragraph four, of the Chinese Patent Law that the claims should be supported by the description. Paragraph six of 35 U.S.C. 112 is a special interpretation directed to claims that include mean-plus-function limitation, without containing any specific technical features. Since the claims that meet the conditions for applying Paragraph six of 35 U.S.C. 112 are construed to be equivalents described in the specification, on the one hand, the claims consequentially meet Paragraph two of 35 U.S.C. 112, and, on the other, even a prior art can perform the function specified in the claims, if the prior-art mode is not the same as, nor equivalent to, the mode described in the specification, the patentability of the claims should not be devested on the basis of the identical function.⁸

Since application of paragraph six of 35 U.S.C. 112 has rendered the examination made under paragraph two of 35 U.S.C. 112 too lax or loose, the USPTO issued, on 9 February 2011, the Supplementary Examination Guidelines relevant to 35 U.S.C. 112, further interpreting the application of para-

graph two of 35 U.S.C. 112. In the Supplementary Examination Guidelines is made the distinction between the means-plus-function claims and functional claiming, with the former explicitly defined as "purely functional definition". In other words, a means-plus-function claim should not be claims reciting "both functional and structural features", and it is specified that "a claim reciting both functional and structural features" is a functional claim, and it is clearly provided that "claims reciting function require stringent examination to see whether it is supported by the description. Examination along the line is no longer made of the means-plus-function claims to determine its scope of protection according the embodiments and equivalents thereof.

III. Logic premise of examination of means-plus-function claims

According to different subject matter of invention recited in the description and the relations between said function and the specified embodiments of the description, subject matters of invention may be divided into the following basic types.

Type 1: The subject matter of an invention presents a new function

As for this type of subject matter of an invention, for lack of mode to perform the function in the prior art, the resolution of the technical problem of the type of subject matter of the invention and the achievement of the technical effect depend on the mode of embodiment specified in the description; under this circumstance, the inventor has invented merely the specified mode of the description and the equivalents thereof, not said new function although it is possible to say that the subject matter of the invention lies in the new function, which can only be construed to be the function of the embodiments recited in the description and the equivalents thereof. For this matter, in case like this, the rightholder has his "right" in the specified mode of the description and the equivalents thereof, not all modes of performance, and his "claim" should be limited to the specified mode of the description and the equivalents thereof.

Type 2: The subject matter of an invention lies in a specified mode to perform a function

The function related to the subject matter of an invention of the type is known, but a specified mode is presented to perform said known function. Under this circumstance, the rightholder's invention is a specific mode to perform the

specified function; hence the rightholder then has this “right” in the specified mode of the description and the equivalents thereof, and his “claim” should be limited to the specified mode of the description and the equivalents thereof.

For the above two types, under the Chinese Patent Law, claims would be rejected or invalidated for reciting only functional mode without defining a specific modes of performance so lacking support from the description. Therefore, the rightholder must outline the desired claims according to the specified mode of the description and the equivalents thereof. But under the US Patent Law, a rightholder can choose to draft his claims according to paragraph six of 35 U.S.C. 112 (purely reciting function), so as to exclude the relevant functional claiming that does not include any specific mode of performance to make it possible for the scope of protection to be construed to be the specified mode of the description and the equivalents thereof. He may also choose to draft the claims (reciting function) under paragraph two of 35 U.S.C. 112, so as to make it possible to outline, from the specified mode of the description and the equivalents thereof, claims that both recite function and specified modes of performance, so as to make it possible for the scope of protection not to be construed to be limited to the specified modes of the description and the equivalents thereof.

Type 3: The subject matter of an invention lies in structural relations among modules (including functional ones), and has nothing to do with the way the specified function of the relevant modules is performed

Take, for example, a signal processing method, the subject matter of the invention is processing of relevant signal in a special sequence, which includes the step for testing the level of the signals. Resolution of the technical problem and the achievement of the technical effect has nothing to do with how to test the level of the signal, and it is OK so long as the relevant step can reach the said level. The subject matter of the invention of the type relates to structural coordination among different modules, and has nothing to do with the way said function is performed. In other words, the technical problem raised in the description can be resolved and corresponding technical effect achieved no matter in what mode said function is performed, which is believed to be supported by the description.

Type 4: The subject matter of an invention has nothing to do with said functional definition feature, nor with the way said function is performed.

For example, for a roof solar device, the subject matter

of the invention was the solar device *per se*, but it also comprised a member for fixating said device on top of a house. The subject matter of the invention of the type has nothing to do with the functional definition feature and the way said function is performed. In other words, the technical problem raised in the description can be resolved and corresponding technical effect achieved no matter in what mode said function is performed.

Where the subject matters of the inventions are of types 3 and 4, the rightholder's “right” should cover all modes to perform said functions. Under the Chinese Patent Law, a rightholder may draft the claims reciting functional technical features and extends the scope of protection to all the modes of performance. But under the US Patent Law, if the claims do not recite any feature of specified modes of performance, then paragraph six of 35 U. S. C. 112 applies, and the scope of the claims is construed as the specified modes of the description and the equivalents thereof. If the claims include features of specified mode of performance, then paragraph two of 35 U. S. C. 112 applies, and the scope of claims is construed as all the modes of said features.

IV. Analysis of rules for examination of means-plus-function claims

As the above shows, for the subject matter of an invention with the resolution of the technical problem and the achievement of the technical effect depending on how a function is performed (above types 1 and 2), whether Article 26, paragraph four, of the Chinese Patent Law or paragraph two of 35 U. S. C. 112 or paragraph six of 35 U. S. C. 112 applies, it is possible to reasonably confine a rightholder's “claims” within his “right” so long as the subject matter of the invention is properly examined.

For example, in the case of reexamination request by the Rogosin Institute⁹, the PRB pointed out in its decision that “said bead allowing penetration of material of molecular weight of at least 30kd” as stated in claim 1 was a functional definition. First, the description of the application did not say the bore size of the biologically compatible, selective transparent bead, nor specify the product or cell of the host immune system. In other words, the maximum molecular weight of the inhibitory substance that could penetrate said bead was uncertain. Next, as the general knowledge of the art showed, if the bore size of the biologically compatible, selective transparent bead only allowed penetration of molecular

weight of less than 30kd or 50kd, even if it prevents the products and cells of the host immune system from entering, the effect of said bead to inhibit cancer cell proliferation was unknown. As was shown above, it could be only determined from the disclosure contained in the description of the application in suit that cancer cell restricted by said specified agarose bead defined or limited cancer cell could produce inhibitive substance, and had the effect of inhibiting cancer cell proliferation. Except the specified agarose bead of embodiments 2 and 9, it was impossible for any person skilled in the art to determine, according to the disclosure contained in the description of the application in suit, that other selective transparent agarose bead allowing material penetration of molecular weight of at least 30kd could also resolve said technical problem and achieve the identical technical effect. Therefore, the functional definition of claim 1 included what the requester had presumed, and its effect was hard to be pre-determined and evaluated; hence claim 1 was not supported by the description, and was contrary to Article 26, paragraph four, of the Patent Law. In the case, resolution of the technical problem depended on the modes of performance specified in the description, so the rightholder was not allowed to use a claim of pure functional definition to broaden the scope of protection. Rather, he was required to limit the scope of protection to the specified modes of performance or the equivalents thereof presented in the description.

For the subject matter of an invention with the resolution of the technical problem and achievement of the technical effect not depending on the way said function is performed (types 3 and 4), under paragraph six of 35 U. S. C. 112, a rightholder cannot extend the scope of protection to all modes of performances of said function. But under the Chinese Patent Law, a rightholder is accorded adequate protection. For example, in the case of reexamination request filed by IBM¹⁰, the PRB pointed out in its decision that for a person skilled in the art, as a timing circuit, RC circuit was one commonly used in the art, and was not the sole mode to perform said function. Whatever timing circuit was used, it would do so long as it worked with a switch circuit and gradually imposed the voltage of the connectors on the first terminal. Therefore, claim 1 confirmed to Article 26, paragraph four, of the Patent Law. As the case shows, for the subject matter of the invention of the type, the Chinese Patent Law allows patentees to extend the scope of protection to all modes of performance.

As far as the legal practice in relation to functional definition in China is concerned, for the examiners, on the one hand, if the prior art can perform said function, it is possible to believe that the functional definition features of the claims are disclosed. This is simple relative to the examination of innovativeness of the claims compared to the prior art. On the other, examination of the relations between the claims and description requires not only determination of whether it is possible to derive the claims from the specified modes of performance in the description, but also consideration of whether the claims so derived contain any technical solution that cannot resolve said technical problem and achieve said technical effect. For a rightholder, it is comparatively difficult to draft his claims as he is required to use accurate language to describe his invention-creation, so that he would not narrow the scope of his claim, and be able to set his invention-creation apart from the prior art, which is a phenomenon particularly prominent in the patent regime where amendment of granted claims is subject to more limitations.

Thus, to keep a maximum balance between the interests of the rightholders and those of the public at large and to make it possible for a rightholder's "claim" to fall within the scope of the "right" and for him to claim the broadest possible scope of protection within the scope of the "right", in the current patent practice in China, what is important is not to introduce a foreign model of interpretation, but to constantly build up the examination capability and improve the proficiency of patent drafting while reducing limitation on amendment to granted claims.

The authors: Examiners of the Patent Reexamination Board of the State Intellectual Property Office

¹ Section 3.2.1, Chapter 2 of Part 2 of the Guidelines for Patent Examination as of 2010.

² For example, the PRB pointed out, in its Decision No. 17632, that "said bead allowing penetration of material of molecular weight of at least 30kd" as stated in claim 1 is a functional definition. ... Except the specified agarose bead of embodiments 2 and 9, it was impossible for any person skilled in the art to determine, according to the disclosure contained in the description of the application in suit that other selective transparent agarose bead allowing penetration of material of molecular weight of at least 30kd could also resolve said technical problem, and achieve the identical technical effect. Therefore, the functional definition of claim 1 included what the requester had presumed, and its effect was hard to be pre-determined and evaluated; hence claim 1 was not sup-

ported by the description, and was contrary to Article 26, paragraph four, of the Patent Law.

³ For example, the PRB concluded, in its Decision No. 9235, that a person skilled in the art could contemplate using other modes to perform the function of “gradually” imposing the voltage of the connectors on the first terminal; hence claim 1 conformed to the provision of Article 26, paragraph four, of the Patent Law.

⁴ The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

⁵ An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

⁶ For example, in 1938, in the judgment of *General Electric Co. v. Wabash Appliance Corporation*, the US Supreme Court pointed out that many existing tungsten filament also comprised considerably large

crystal, much of which was so large as to run across whole filament, but their dislocation occurred (the relevant subject matter of the invention was to resolve the technical problem of easy dislocation of filament when in use). The patentee failed to clearly state, in the language of the claims, its obvious improvement of the defects other inventors had been aware of, and the invention should be an invalid one.

⁷ For example, in 1946, in the judgment of *Halliburton Oil Cementing Co. v. Walker et al*, US Supreme Court pointed out that “we had no idea how many kinds of equipment of a plurality of types and features were capable of performing said echoing function, and the patentee had no right to broaden the right so much as to prohibit others from using all equipment that was known then and would be in the future.

⁸ See USPTO, Examination Guidelines For Claims Reciting a “Means or Step Plus Function” Limitation under paragraph six of 35 U.S.C. 112, 20 April 1994.

⁹ See the PRB’s Decision No.17632.

¹⁰ See the PRB’s Decision No. 9235.

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美國第二巡迴上訴法院 2011 年 8 月 15 日就 *John Wiley & Sons Inc. v. Kirtsaeng* 案作出判決，以國外印製的作品不能適用權利用盡原則，判定被告在美國銷售其在國外購買的教科書侵犯了版權所有人的權利。

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在 *John Wiley & Sons Inc. v. Kirtsaeng* 案中，Kirtsaeng 是一名亞裔美國大學研究生。為了幫補學費，他託家人從亞洲某國購買獲得美國版權所有人授權

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訴訟中，被告 Kirtsaeng 表示，他在網上賣的書都是從亞洲出版商那里合法買來的，因此應該適用美國版權法第 109 條(a)款有關權利用盡的規定。原告 Wiley 認為，本案不能適用權利用盡原則，因為美國版權法第 109 條(a)款規定中的“根據本法合法製作的”應被解釋為“在本國合法製作的”。

法院支持了原告的理由。法院認為，“第 109 條(a)款的相關文字不清晰”，而整個條款“特別模糊”，為此，需要藉助第 602 條(a)款的規定對第 109 條(a)款的

語義加以澄清。第 602 條(a)(1)款的規定禁止未經版權所有人許可將國外獲得的版權作品複製件進口到美國。法院認為，根據該款規定的精神，最適當的解釋是，第 109 條(a)款的權利用盡原則僅僅適用於美國國內製作的作品。法院據此判決被告 Kirtsaeng 侵權成立。

美國業界對此判決表示不解。他們認為，如果只要是國外製作的作品就不能返銷到美國來，將迫使美國企業將它們的製造基地整個地轉移到國外去。這是因為，現代化的工業生產中部件生產和總裝並不限於在一個國家，而產品中包含的版權作品（例如產品 logo 等）免不了你中有我，我中有你。如果只要進口到美國都需要每一項權利的所有人許可，不僅帶來銷售上的不便，還會額外增加成本，在商業上是行不通的。

(蕭海)