Featured Article

Utility Model Patents in China: Considerations of Incorporating Method Features in Claims

Utility model patents in China do not need substantive examination and have the characteristics of short authorization periods and relatively low authorization difficulty. These features enable enterprises to secure patents in a short time frame, making utility model patents a valuable tool for protecting products. Meanwhile, the cost of utility model patents is significantly lower than that of invention patents due to differences in examination procedures, further enhancing their appeal to patent applicants.

However, the scope of protection offered by utility model patents is limited. Unlike invention patents, utility model patents only protect products and do not extend to methods. Nevertheless, Section 3.2, Chapter 2, Part II of the *Guidelines for Patent Examination* states:

> "The product claims should generally be described by features of structure of the product, and when it cannot be clearly defined by features of structure or features of parameter, it is allowed to define the technical features by virtue of features of method. "

This provision highlights that the characterization of product claims using method features, in addition to structural features, is not excluded under the current Patent Law and *Guidelines for Patent Examination*.

In essence, product claims may incorporate method elements. However, this does not equate method features with structural features in terms of function. In practice, determining whether a technical solution that combines product features—such as manufacturing or processing methods—with structural features falls within the scope of utility model protection can be complex.

This article examines the key considerations when applying for utility model patents that involve technical solutions defined by manufacturing method features. Drawing insights from the Supreme People's Court case *No. 422 Administrative Judgment (2021)*, we aim to provide readers with practical guidance and inspiration for navigating these issues.

I. Case brief

A patent for utility model (hereinafter referred to as the patent involved) with application number 201520898029.6, titled "Glue-free Environmentally Friendly Sealing Roll" has successively gone through the invalidation request, first-instance administrative litigation and second-instance administrative litigation. Claim 1 of the patent involved at the time of authorization announcement is as follows:

> "1. A glue-free environment-friendly sealing roll comprising a roll end turn at the outermost layer of the roll, characterized in that: a pressing portion protruding from the circumferential surface is formed in the axial direction of the roll near the trailing end of the roll end turn, and the pressing portion is formed by co-pinching or co-extruding one or more turns of roll paper on the roll and the roll end turn through mechanical interlayer pressing. "

It can be seen that the patentee uses the features of methods "formed by co-pinching or co-extruding through mechanical interlayer pressing" to define the product claim in the patent involved, which belong to a typical "utility model containing the features of manufacturing method."

In the patent invalidation case No. 5W117019, the invalidation requester cited two primary grounds: (1) the subject matter is "not within the scope of protection for a utility model patent" and (2) the patent lacks "novelty and inventiveness."

The evidence submitted by the requester comprises Evidence 1: invention patent document CN101674993A, and it discloses a method and device for closing the tailing end of a roll of web material and the obtained roll.

China National Intellectual Property Administration (CNIPA) made the examination decision of request for invalidation No. 41627, declaring the patent rights involved partially invalid. The invalidation requester dissatisfied and appealed to Beijing Intellectual Property Court. The first-instance judgment did not support the conclusion of CNIPA on inventiveness, and ordered the sued decision to be revoked. Thereafter, the patentee appealed to the Supreme People's Court. Although the second-instance judgment supported the result of the first-instance judgment, rejected the appeal and upheld the original judgment, it pointed out that the identification of distinctive features and novelty in the first-instance judgment was wrong.

Regarding the technical solution of claim 1 of the patent involved, the disputes include: (1) whether the subject matter is within the scope of protection for a utility model patent, and (2) whether the claim is novel and inventive.

Hereinafter, by comparing and analyzing the similarities and differences between the views of the examination decision of request for invalidation, the first-instance judgment and the second-instance judgment, the above two disputes are sorted out and discussed respectively.

II. Discussion on the protection subject matter of utility model

The *Guidelines for Patent Examination* state that "the name of a known method may be used in a claim to define the shape and structure of a product; however, the steps, process conditions, and other details of the method shall not be included."

Since the patent involved defines the "pressing portion" by "formed by co-pinching or co-extruding one or more turns of roll paper on the roll and the roll end turn through mechanical interlayer pressing", the invalidation requester believes that claim 1 contains improvements to the manufacturing method itself and is not the protection subject matter of a utility model patent.

In this regard, the perspective of CNIPA is that: the product claimed by the patent involved is a glue-free environment-friendly sealing roll, and the roll is an entity manufactured by an industrial method and has a certain shape and structure and occupies a certain space. Although "formed by co-pinching or co-extruding through mechanical interlayer pressing" appears in claim 1, the technical feature is a limitation made by the name of the known method on the connection relationship between one or more turns of roll paper contained in the pressing portion and the roll end turn, which is not an improvement to the method itself. Therefore, the glue-free environment-friendly sealing roll claimed by claim 1 belongs to the protection subject matter of a utility model patent.

During the second trial, the invalidation requester argues again that the technical feature of the mechanical interlayer pressing method belongs to the improvement of the sealing method, and is not the protection subject matter of a utility model patent.

The second trial court believes that, since the patent involved is a utility model of a roll product, the protection subject matter of patent should be the shape, structure or combination of the roll itself, not the method of producing the roll, unless the method itself leads to a specific shape and structure of the product. If the features of method can make the product have a specific shape and structure, the features of method can limit the protection scope of the patent for utility model.

Further, the second trial court indicates that when judging the novelty and inventiveness of the utility model, the specific shape and structure caused by the method should still be compared with the shape and structure of the prior art, rather than comparing the method itself with the method of the prior art. If the features of method in the claims of the patent for utility model do not affect the shape and structure of the product, when determining novel and inventiveness, only the technical features of shape and structure of the product other than the features of method should be compared with the relevant shape and structure of the prior art.

Discussions

The examination decision by CNIPA and the judgment from the court of second instance indicate that the invalidation reason stating "claim 1 is not within the subject matter of protection for a utility model patent" was not upheld.

This demonstrates that, in current examination practice, when assessing whether a utility model complies with Article 2.3 of the *Patent Law*, the mere inclusion of method features in a claim does not automatically exclude the subject matter from being considered valid utility model protection, as long as the claimed subject matter is a product.

For example, in view of the present case, for the dispute feature of "formed by co-pinching or co-extruding one or more turns of roll paper on the roll and the roll end turn through mechanical interlayer pressing," CNIPA believes that it belongs to "a limitation of the connection relationship between one or more turns of roll paper contained in the pressing portion and the roll end turn." However, the court of second instance believes that it belongs to "a limitation of the formation mode of the structure of the pressing portion." Although there is a difference in the determination of the limitation mode of the feature of method on the structure, no matter CNIPA, the court of first instance or the court of second instance, it has been recognized that claim 1 of the patent involved protects the structure formed by the method, instead of the method, and

thus it belongs to the protection object of utility model.

The author believes that the provision in the *Guidelines for Patent Examination* stating that "the steps, process conditions, and the like, of the method shall not be included" serves as a detailed interpretation of the principle that "methods are not within the scope of protection for utility model patents," rather than introducing an additional limitation.

In essence, this provision excludes utility models whose subject matter is a method or products whose defining solution is inherently tied to a method. However, if a utility model uses features of a known method to define the structure of a product in its distinguishing part, and these method features genuinely affect the product' s shape and structure, producing a characteristic effect, the subject matter still falls within the scope of utility model protection

In other words, when evaluating a utility model whose inventive concept includes method-related elements, there is no need to "overreact" to the presence of method features. The possibility of applying for a utility model should not be dismissed solely based on concerns about non-compliance with Article 2.3 of the *Patent Law*.

However, even if the overall solution meets the requirements for the subject matter of utility model protection, does this automatically mean the solution is suitable for applying for a utility model patent? How do method features in the claims impact the scope of protection? After overcoming the "first hurdle" of ensuring the subject matter qualifies for utility model protection, the next critical considerations are the novelty and inventiveness of the product claims.

III. Discussion on novelty and inventiveness

The invalidation requester submitted multiple pieces of evidence; however, the primary focus of the dispute lies in whether claim 1 of the patent in question possesses novelty and inventiveness in light of Evidence 1. Therefore, the following discussion is limited to the assessment of the novelty and inventiveness of claim 1 with respect to Evidence 1.

Claim 1 essentially contains two technical solutions, and the two technical solutions need to be evaluated separately when judging novelty and inventiveness.

Claim 1: A glue-free environment-friendly sealing roll comprising a roll end turn at the outermost layer of the roll, characterized in that: a pressing portion protruding from the circumferential surface is formed in the axial direction of the roll near the trailing end of the roll end turn, and the pressing portion is formed by co-pinching or co-extruding one (referred to as technical solution A) or more turns (referred to as technical solution B) of roll

paper on the roll and the roll end turn through mechanical interlayer pressing.

Regarding the novelty and inventiveness of claim 1, the conclusions reached in the examination decision of request for invalidation, the first-instance judgment and the second-instance judgment are different:

The examination decision: technical solution A has novelty, but does not have inventiveness; and technical solution B has inventiveness.

The first-instance judgment: technical solution A has novelty, but does not have inventiveness; and technical solution B does not have inventiveness.

The second-instance judgment: technical solution A does not have novelty, and technical solution B does not have inventiveness.

(1) Analysis on novelty

Both the examination decision of request for invalidation and the first-instance judgment held that technical solution A has novelty, and the distinctive technical feature is that the mechanical interlayer pressing method of the pressing portion is different. However, the second-instance judgment denied it, holding that there is no distinctive technical feature between technical solution A and Evidence 1 in different pressing methods. The main differences therebetween are:

Both the examination decision of request for invalidation and the first-instance judgment held that the pressing portion of the patent involved is formed by co-pinching or co-extruding one turn of roll paper and the end turn, while the joint in Evidence 1 is formed by mechanical interlayer bonding of a tailing end to a fold portion through high pressure applied by a pressure piece to a reverse side defined by a cross bar. It can be seen that the pressing portion of the patent involved is formed by applying pressure from two opposite directions at the same time, while the joint in Evidence 1 is formed by applying pressure from one direction. There are differences in the formation process and method of the pressing portion therebetween, which constitutes the distinctive technical feature. As a result, the above features belong to "a limitation of the connection relationship between one or more turns of roll paper contained in the pressing portion and the roll end turn".

The second-instance judgment pointed out that "the pressing portion is formed by co-pinching or co-extruding through mechanical interlayer pressing" is "a limitation on the formation method of the pressing portion", in which "mechanical interlayer pressing" is different from the method such as glue bonding. The above features may affect the shape and structure of the roll, and should be deemed to have a limiting effect on the scope of protection for a utility model patent. However, the joint in Evidence 1 is also formed by a mechanical interlayer pressing method.

Regarding "pinching or extruding", pinching, extruding, pressing, clamping, and the like, are all specific methods of mechanical pressing and cannot affect the shape and structure of the product. Claim 1 does not describe pinching or extruding by applying a force from two directions. Even it is considered that claim 1 defines the application of pressure to the middle from two directions after considering the embodiments in the specification, it only limits the forming method of the pressing portion, and whether the force is applied from one direction or from two directions, the shape and structure of the finally formed pressing portion and the roll is not affected. At the same time, the claim 1 of the patent involved does not define the device for pinching or extruding, and it also does not define the size or specific position of the device for pinching or extruding. Thus, although the patentee claims that the pressing method of the patent involved can result in a different number of layers of roll paper formed, it does not necessarily lead to the formation of different pressing portions between the patent involved and Evidence 1, even if the contents described in the specification are considered. As a result, "pinching or extruding" does not limit the scope of protection for a utility model patent, and should not be considered when evaluating the novelty and inventiveness.

Discussions

The above analysis demonstrates that different conclusions are generated based on different considerations of the limiting effect of the method features on the structure.

Both the examination decision of request for invalidation and the first-instance judgment believe that the method features limits the connection relationship, and thus they are considered when evaluating the novelty and inventiveness; but the second-instance judgment believes that defining a structure by means of the method features is essentially still a limitation on the method though which the structure is formed, whether the formation method inevitably causes different structures or not needs to be considered, and the formation method (such as mechanical interlayer pressing) capable of limiting the structure is considered when evaluating the novelty and inventiveness; and the formation method (such as pinching or extruding) that does not have a limiting effect on the structure is not considered when evaluating the novelty and inventiveness.

From the above discussion of the effect of limiting the protection scope of the method for forming a specific structure, it can be found that limiting methods such as the forming or manufacturing methods are not universally disregarded when evaluating the novelty and inventiveness, and it also not automatically considered that the method constitutes distinctive features because the method is distinguished from the prior art. During evaluation, the method should be restored to the structure, and the method features are considered, as

long as the forming method has a limiting effect on the structure. Meanwhile, even if the method features are considered, it is not a comparison between the method itself and the prior art, but rather a specific shape or structure resulting from the method is compared with the shape or structure of the prior art.

In essence, the protection subject matter of utility model patent incorporating method features may include a structure necessarily limited by the method, but not a structure that cannot be necessarily obtained from the method or the method itself.

(2) Analysis on inventiveness

The determination of inventiveness is closely related to the determination of novelty. Whether the method features constitute distinctive features has been discussed in the section of analysis on novelty. In this section, the discussion will be focused on the evaluation of the motivation for improvement involving the technical features of the manufacturing method. The problem of the motivation for improvement is not clearly discussed in the first-instance judgment. Herein, the difference between the examination decision of request for invalidation and second-instance judgment on the motivation for improvement is mainly analyzed.

Both the examination decision of request for invalidation and second-instance judgment held that technical solution B has the distinctive feature of "different number of layers of roll paper of the pressing portion", and in technical solution B, the pressing portion is formed by the pinching or extruding several turns of roll paper on the roll and the end turn; while the pressing portion of Evidence 1 is formed by pressing one turn of roll paper on the roll and the end turn. Therefore, both viewpoints recognize the novelty of technical solution B.

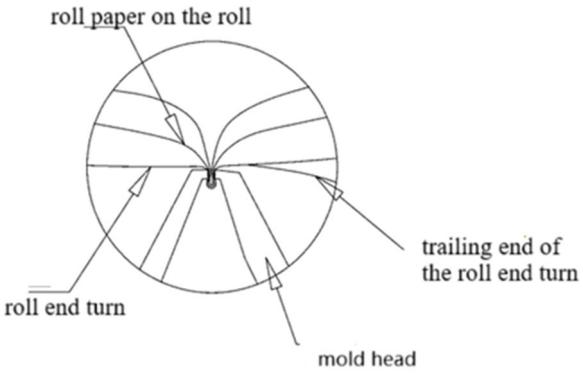

FIG. 1 Formation method of the pressing portion of the patent involved

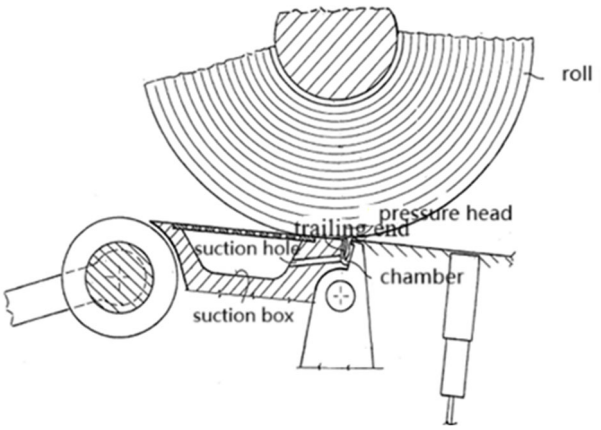

FIG. 2 Formation method of the pressing portion disclosed in Evidence 1

On the basis of the distinctive features, the technical problem actually solved by

technical solution B determined in the examination decision of request for invalidation and second-instance judgment is how to further improve the stability of the pressing portion.

The examination decision of request for invalidation believes that the method and device disclosed in Evidence 1 can only form a joint formed from three layers of roll paper, and the technical problem of "avoiding the difficulties often encountered when removing the trailing end glued with conventional systems" has been solved by the joint that may be formed from three layers of roll paper in Evidence 1. Thus, those skilled in the art do not have sufficient reasons and motivation to increase the number of layers of joint roll paper to four or above.

The second-instance judgment believes that, whether it is Evidence 1 or the patent involved, the purpose of arranging the pressing portion is to fix the trailing end of the rolled paper to prevent the rolled paper from falling apart. In order to better fix the trailing end of the roll paper, those skilled in the art are motivated to improve the pressing portion and improve its stability. In a certain thickness, the larger the number of layers of the pressing portion is, the larger the action space of the force during the mechanical interlayer pressing, and the more stable the structure of the pressing portion is, which is common knowledge in the art. Thus, in order to improve the stability of the pressing portion and achieve a better roll sealing effect, those skilled in the art have the motivation and easy thought of increasing the number of turns of pressing with the end turn of roll paper, and improving the pressing portion pressed with one turn of paper and the end turn roll paper into the pressing portion pressed with several turns of paper and the end turn of roll paper, so as to obtain the roll product claimed by technical solution B.

Discussions

The examination decision of request for invalidation held that, on the premise that the joint formed from three layers of roll paper in Evidence 1 can already solve the corresponding technical problems, those skilled in the art do not have motivation to improve the device and method in Evidence 1 into a device and method for manufacturing the pressing portion with several turns of roll paper and the end turn of roll paper. This view is upheld by the court of second instance.

However, the difference is that the second-instance judgment denies the direction of the examination decision of request for invalidation to judge the technical enlightenment, and emphasizes that the motivation for improvement is aimed at the product rather than the method. For the present case, when judging whether those skilled in the art have the motivation for improvement, it is not to evaluate whether there is the motivation to improve the device or method for manufacturing the roll of Evidence 1 into the device or method for manufacturing the roll of the

patent involved. Rather, it is to evaluate whether there is the motivation to improve the roll product manufactured by the device or method for manufacturing the roll of Evidence 1 into the roll product of the patent involved. The viewpoint of the examination decision of request for invalidation is actually "by using the method for manufacturing the present patent product as an inventive concept of the present patent, it is considered that the prior art does not provide technical enlightenment for the manufacturing method, and accordingly the present patent is determined to be inventive. This determination deviates from the scope of protection of a utility model patent". Meanwhile, since it is common knowledge that the more layers of the pressing portion are, the more stable the structure is, those skilled in the art have an improvement motivation to improve the roll product.

The author believes that the second-instance judgment points out the limiting effect of technical features incorporating manufacturing methods in evaluation of inventiveness. On the basis of constituting distinctive features, whether there is motivation for improvement depends on the subject matter protected by the claim. For example, a patent right protects a product, but the structure of the product is defined in the claim by a method of forming the product (method a), while the prior art used to evaluate inventiveness is also a method of forming the similar product (method b). At this time, when judging the motivation for improvement, it is not to determine whether there is motivation to improve method b into method a, but to determine whether there is motivation to improve the product that can be formed by method b into the product protected by patent right.

In other words, even if the manufacturing method (method a) used in the patent involved is inventive compared with the method (method b) in the prior art, since the method features themselves have been excluded from the scope of protection of a utility model patent and only the structure necessarily defined by the method is retained, it may be considered that there is the corresponding motivation for improvement, as long as those skilled in the art have the motivation to improve the product in the prior art into the product claimed for protection.

IV. Practical tips for utility model patents including technical solutions involving the features of manufacturing methods

Through the above case analysis, combined with the author's own experience, several practical tips when applying for utility model patents including technical solutions involving the features of manufacturing methods are put forward herein:

(1) After clarifying the inventive concept and technical means, it is necessary to

accurately determine the technical features that enable the technical solutions to solve the technical problems actually to be solved. There may be several possible situations for the features of manufacturing methods in the technical solutions:

① The method has a limiting effect on the shape and structure of the product, but said method belongs to a known method and is only a way to realize the product. For example, part A is applied with glue and then part B is attached onto it. Another example is a circuit is formed on a film layer by deposition and etching method.

② The method has a limiting effect on the shape and structure of the product, and said method is not known. For example, a method for manufacturing a display panel has the inventive concept of forming a new panel by a new process.

③ The method does not define the shape and structure of the product. For example, a workpiece whose inventive concept is that one of a certain auxiliary positioning structure is added to the workpiece in an intermediate step, and the positioning structure is removed in a subsequent step and is not embodied in the final product to be protected. Another example is a semiconductor device whose inventive concept is that a protective film layer is formed in one of the steps and the film layer is removed in a subsequent cleaning step, and the intermediate product has no protection value.

(2) For different situations, different processing strategies may be selected and discussed as follows:

For situation ①, the author believes that it can be protected by the utility model patent. The claims should be structurally limited as much as possible, for example, an adhesive layer is formed between part A and part B; and another example is to directly describe the structure of the circuit formed by a particular process.

For a product which is difficult to be clearly defined only by using the structure features, and the method is common knowledge, for example, "mechanical interlayer pressing" in the present application, it may be interpreted a limitation of the forming method of the pressing portion or a limitation of the connection method of the components forming the pressing portion. For the sake of simplicity, it may be prudent to use the features of manufacturing method to define as a supplement to the structure features. At the same time, in order to avoid the problem of unclear protection scope, it is recommended to explain in detail what "mechanical interlayer pressing" is in the specification. For example, the description such as "by superimposing two sheets or two layers of web material, in particular of fibrous material, such as tissue paper or the like, and subjecting these two layers to a high local pressure, they are partially joined together by a fiber" may be added to the specification.

Furthermore, it should be understood that the limiting effects of the features of manufacturing method and their effects in evaluating the novelty and inventiveness are limited to their limiting effects on the structure. For example, in the present technical solution, if the mechanical interlayer pressing is achieved by pinching with a special collet, or by applying a force at a specific position and direction by the collet, or pinching for a specific time, even if such a process is described, it is not generally considered to have a limiting effect on the protection scope because it is not certain that some structure different from that of the prior art can necessarily be obtained.

For the above case, the features of manufacturing method may be converted into the structure features by corresponding methods to structures, for example, a symmetrical or asymmetrical structure of the pressing portion formed due to the difference of the pinching force and angle on both sides. As another example, a specific pinching force/pinching time causes the thickness ratio of the pressing portion to the non-pressing area, or a specific pinching force direction/a specific collet causes the pressing portion to have a certain structure, texture, or the like.

For situation ②, the author believes that the claims should be structurally limited as much as possible. For example, each film layer structure of the panel formed by the method and the stacking relationship with each other are directly described. The difference from situation ① is that since the manufacturing method is not known, it should not limit the claims by the method to avoid defects in the scope of protection for a utility model patent.

In addition, in situation ②, although the manufacturing method may also be described in the specification in order to clearly illustrate the structure features, the actual protection subject matter is still the product, and the manufacturing method is not protected. The protection of this manufacturing method can only be realized through invention patents.

For situation ③, the author believes that they are not suitable for protection by utility model patents.

V. Conclusion

According to data released by CNIPA, the number of utility model patent applications in China accounted for more than half of all patent applications in 2023. This demonstrates that utility model patents play a significant role in patent protection system of China. From the perspective of the Supreme People' s Court case *No. 422 Administrative Judgment (2021)*, this article briefly discusses the issues that need to be considered when applying for utility model patents including technical solutions involving the features of manufacturing method, mainly including whether they comply with the provisions of the

protection subject matter of utility model, as well as identification of distinctive features and consideration of motivation for improvement when evaluating the novelty and inventiveness. It is hoped that through this typical case, we can have a deeper understanding of the protection subject matter and the assessment of novelty and inventiveness of utility model, the quality of utility model patent applications may be improved, enterprises may be assisted to formulate more diversified and comprehensive patent application strategies, and innovation achievements may be strongly protected.

Reference:

[1] 2023 Annual Report of CNIPA.

[2] No. 422 Administrative Judgment, (2021), Final, Administrative division, IP, Supreme Law, Supreme People's Court of the People's Republic of China.

[3] No. 12602 Administrative Judgment, (2019), Initial, Administrative division, Jing 73, Beijing Intellectual Property Court.

[4] No. 41627 Examination Decision of Request for Invalidation of CNIPA.

[5] Fenghao ZHANG, "Brief Analysis of Protection Object of Patent for Utility Model from Practical Perspective", https://zhuanlan.zhihu.com/p/448438627, last accessed on September 6, 2024.

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