Motivation and Lack of Motivation:

Tentative Examination of Interaction between Closest Prior Art and Distinguishing Technical Feature

Duan Liyan and Yang Cunji

I. Raising of the issue

By "motivation" is meant a function of one natural element to motivate or promote the growth of another; and by "lack of motivation" is meant a function of one such element to restrain or restrict another. Motivation and lack of motivation are important for the Chinese people to understand and transform the natural world. In the "three-step" test of the inventiveness of a patent, if the distinguishing technical feature is a relevant technical means disclosed in a prior art and said means plays the same function in said prior art as that of said distinguishing technical feature solve the technical problem the invention is intended to solve in the claimed invention, then it is generally believed that the prior art motivates said distinguishing technical feature in the closest prior art to solve the existing technical problem, which motivates a person skilled in the art, facing said technical problem, to improve the closest prior art and arrive at the claimed invention. If this circumstance is deemed to be the function of the distinguishing technical feature to motivate the closest prior art, that is, the distinguishing technical feature can motivate and facilitate the closest prior art to grow into a claimed invention, does there exist another circumstance where the closest prior art restricts the it, and inhibits it from approaching the closest prior art to such an extent as to restrict the combination of it with the closest prior art to derive the claimed invention?

This article is meant to examine the function of the closest prior art to restrict distinguishing technical feature to draw readers' attention to the matter.

II. Briefing of the case

Claim 1 of a patent application claims a bag sealer. It is stated in the description of the application that the existing bag sealer mainly comprises a drum housing bags, a cutter and a sealer. The drum is rotated by the driving mechanism to drop the bags for a distance, then the cutter cuts the connected bags off to make separate bags, which are sealed up by the bag sealer after goods are put into the bags. The bag sealer of the kind is commonly seen in production lines. Since a cutting tool is used in present cutters to cut off bags in large movement, the bag sealer occupies too large space to be used in any automatic goods retailing machine. The cutter 163 in the present invention used in the bag sealer uses the first electric-thermal components 1642 to cut off the rolled plastic bags 2, and makes it possible for the bag sealer to be made in a delicately small size, and put in an automatic goods retailing machine.

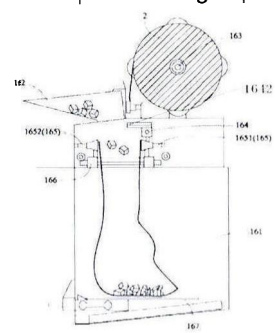

Fig.1 A side view showing the bag sealer in the patent

The closest prior art, reference 1 (JP 2002240808A), discloses a bag sealer, comprising the body of the bag sealer; fill-in mouth 5, placed on, and connected to the main body of the bag sealer; bag-filling mechanism 2, holding separate plastic bags dropping into said body of the bag sealer; suction nozzle group mounted inside said body of the bag sealer and comprising a first suction nozzle 3 and a second suction nozzle 7, each of which faces the opposite direction and can move upward from the first direction, which parallels the axial direction of the first and second suction nozzles; and sealing mechanism 8 in which is deposed a second electro-thermal component and which is located below said suction nozzle group, with said second electro-thermal component

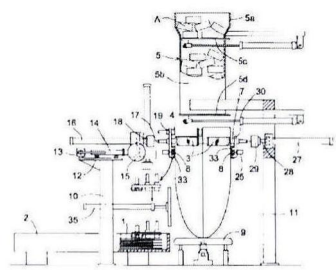

Fig.2 A side view showing the bag sealer in reference 1

stretching in the bag sealing direction.

Another prior art, namely reference 2 (CN 2313854Y), discloses a machine for making, filling, and sealing bags, comprising casing 1, in which are mounted such parts as the transmission member and control means; on the casing are mounted the thermal sealing and packing material drum 2 and material box 3; outside the casing are installed package bag shaper 4, which is connected to the material box, running through the two feeding channels of shaper 5, vertical thermal sealing cutter 6 and bottom thermal sealing cutter 10. When the cutter 6 and bottom thermal sealing cutter 10 come close, vertical thermal sealing cutting and sidewise thermal sealing and cutting at the bottom of film tube are performed. When 6 and 10 open, transmission wheel 8 rotates to pull down the film and moves it down after the film is folded through shaper 4, and performs canning at the same time, and then starts the next cycle, thus incessantly and automatically repeating the process of two-bag packing on the two tracks.

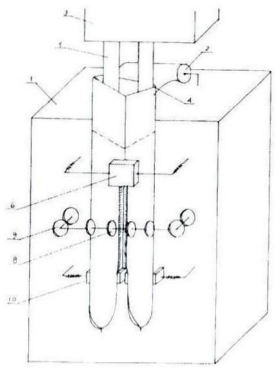

Fig.3 Structure of the packing machine in reference 2

There are two views on the case.

View 1 is that claim 1 of the patent application in suit differs from the distinguishing technical feature of reference 1 in that said bag sealer also includes a drum, which comprises a roller, with the drum plastic bags being around the roller and a part of the drum of plastic bags dropping into said bag sealer; a cutter installed insider said bag sealer, with the first electro-thermal components disposed on said cutter and stretching in the first direction, which parelles the axial direction of said first electro-thermal component, and said first electro-thermal component can move in the second direction, with the first and second direction being vertical to each other; the cutter is on top of the suction nozzle group. According to said distinguishing technical feature, the claimed invention is meant to solve the technical problem of how to use said bag sealer to seal the plastic bags around the drum. Reference 2 discloses a bag sealer for separating the connected plastic, which comprises drum 2 and cutter 6, with the cutter disposed inside the bag sealer and functioning to seal the plastic bags around the drumm. That is, reference 2 offers the technical motivation on how to solve the problem in reference 1 that bag sealer cannot be used to seal the drum of plastic bags.

View 2 is that the primary condition for a closest prior art to motivate a person skilled in the art, upon knowledge of it, to improve it in the direction of the claimed invention is that said closest prior art needs to be improved in the direction, so that a person skilled in the art would combine the closest prior art with the distinguishing technical feature to meet the technical need and to derive the claimed invention. When the closest prior art does not have the technical need, a person skilled in the art would not be motivated to combine the two, so it cannot be concluded that said closest prior art offers the technical motivation. When the closest prior art functionally rejects the function the distinguishing technical feature performs in the claimed invention, it should be concluded that the closest prior art does not have the need. Since the bag sealer of reference 1 uses separate plastic bags that have been cut apart beforehand, there does not exist the technical need for cutting and separating the plastics bags. A person skilled in the art would not, upon knowledge of the technical information of reference 1, be motivated to add a cutter; hence reference 1 does not offer the technical motivation to combine a cutter.

III. Analysis and comments

Under Article 23, paragraph three, of the Chinese Patent Law, "inventiveness" means that, compared with the existing technology, the invention has prominent substantive features and represents a notable progress. It is provided in Chapter 4 of Part II of the Guidelines for Patent Examination that by "that an invention has prominent substantive features" is meant that the invention, compared with the prior art, is not obvious to a person skilled in the art. What are known to a person skilled in the art are the known closest prior art and another prior art containing distinguishing technical feature (hereinafter referred to as another prior art), and what is unknown to him is the claimed invention. When inventiveness is assessed with the three-step test, the key step is to determine whether the prior art is technically motivating in that a person skilled in the art is motivated to combine the closest prior art with the distinguishing technical feature to secure a claimed invention. The closest prior art, another prior art and claimed invention are composed of a limited number of technical features. A person skilled in the art, on the one hand, is rational in that before knowing about a claimed invention, he

would not randomly select, from the closest prior art and another prior art, combination of some technical features to obtain a new technology; on the other, he only has the common means and ability to experiment, and does not have extraordinary insight, nor is he able to obviously select the claimed invention from a huge number of technical solutions comprising said random technical features. To motivate a person skilled in the art to combine the closest prior art with another prior art, the two must teach in that direction, and reminds a person skilled in the art to use the technical means of another prior art to improve the closest prior art.

For a closest prior art the primary condition is the presence of the technical need for the claimed invention, so that a person skilled in the art, upon knowledge of the closets prior art, knows about the technical need and is thus motivated to combine the two when he knows about another prior art meeting the technical need. When the closest prior art does not have the technical need, a person skilled in the art would not be motivated to improve it in the direction of the claimed invention; even if he obtains the other prior art, he would not aimlessly combine one with the other. Whether the closest prior art has the technical need depends on the interrelationship among the claimed invention, closest prior art, and another prior art. When the claimed invention contains all the technical features of the closest prior art, for example, in the claimed invention A+B, when the closest prior art is A, as simply adding distinguishing technical feature B to the closest prior art A would derive the claimed invention A+B, and no other technical factors in the closest prior art would inhibit the combination of A with B, it is possible to believe that the closest prior art has said technical need. When the claimed invention contains only some technical features of the closest prior art, say the claimed invention being A+B and the closest prior art A+C, as deriving the claimed invention requires to separate technical features A and C to form the closest prior art, delete technical feature C and add technical feature B, when it is difficult to separate technical features A and C from each other or for technical features C and B to substitute each other, for example, technical features A and C structurally rely on each other and technical features C and B functionally reject each other, it is possible to believe that the closest prior art rejects said technical need. Then, it is possible to conclude that the closest prior art and distinguishing technical feature are mutually restrictive in that the former restricts the latter, inhibiting the latter to approach the former, so that the distinguishing technical feature is restricted from being combined with the closest prior art to derive the claimed invention.

The other prior art should primarily be capable of meeting the said technical need. It is provided in Section 3.2, Chapter 4 of Part II of the Guidelines for Patent Examination that "Under the following circumstance, it is usually thought there exists such a technical motivation in the prior art. ···. (ii) The said distinguishing feature is a technical means related to the closest prior art, such as a technical means disclosed in other part of the same reference document, the function of which in the other part is the same as that of the distinguishing feature in the claimed invention in solving the redetermined technical problem. ··· . (iii) The said distinguishing feature is a relevant technical means disclosed in another reference document, the function of which in that reference document is the same as that of the distinguishing feature in the claimed invention in solving the redetermined technical problem."[1] The requirement of "same function" is a concrete embodiment of the fact that another prior art must meet said technical need, and it is only then that the distinguishing technical feature is motivating toward the closest prior art.

Let's go back to the case under study. The claimed bag sealer comprises the drum and cutting components for cutting apart rolls of bags; and in the bag sealer of reference 1 are used separated bags that are cut apart beforehand; there does not exist the technical need for re-cutting the rolls of bags to make separate ones. Further, the claimed invention is not derived by simple addition, to reference 1, of the drum and cutter in reference 2, so a person skilled in the art would, upon knowledge of the technical information of reference 1, not be motivated to add or substitute a cutter, nor, upon knowledge of the technical information of reference 2, to add it to reference 1, so there is no technical motivation to combine the two references.

In conclusion, the closest prior art motivates, and does not motivate, distinguishing technical feature. In assessing the inventiveness of a patent with the three-step test, we should consider not only whether the distinguishing technical feature functions in the claimed invention in the same way as in another prior art, but also whether the latter constrain and restrict its combination with the former.

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

[1] The Guidelines for Patent Examination as of 2010, Pp. 197-198.