Patent Right	Date	January 29, 2020	Court	Intellectual Property High Court, Fourth Division
	Case number	2018 (Gyo-Ke) 10170		

- A case in which, with regard to an invention titled "LITHIUM FLUOROSULFONATE, NONAQUEOUS ELECTROLYTIC SOLUTION, AND NONAQUEOUS ELECTROLYTIC SOLUTION SECONDARY BATTERY", it was found that the patent revocation decision erred in finding of a problem of the invention, and that a person ordinarily skilled in the art can recognize, based on the Detailed Description of the Invention in the description and common general technical knowledge, that the problem of the invention can be solved through the whole of the matters for defining the invention, and thus, the invention complies with the support requirement, and therefore, the above decision was rescinded.

Case type: Rescission of Patent Revocation Decision

Result: Granted

References: Article 36, paragraph (6), item (i) of the Patent Act

Related rights, etc.: Patent No. 5987431

Decision of JPO: Opposition No. 2017-700208

Summary of the Judgment

1. The present case is a lawsuit for rescission of a patent revocation decision with regard to Present Inventions 1, 2, and 4 titled "LITHIUM FLUOROSULFONATE, NONAQUEOUS ELECTROLYTIC SOLUTION, AND NONAQUEOUS ELECTROLYTIC SOLUTION SECONDARY BATTERY". The decision of the present case determined that Present Inventions 1, 2, and 4 do not comply with the requirement under Article 36, paragraph (6), item (i) of the Patent Act (support requirement). As reasons for rescission, the plaintiff asserted that the decision erred in determining the support requirement of Present Inventions 1, 2, and 4.

2. The present judgment held as follows and rescinded the decision of the present case.

(1) Finding of a problem of Present Invention 4

A. From the statement of the description of the present case, it can be understood that a problem of "the present invention" was shown to provide "an additive to nonaqueous electrolytic solutions and a nonaqueous electrolytic solution" capable of providing nonaqueous electrolytic solution secondary batteries which maintain "initial battery characteristics and durability" and "excellent input-output characteristics and impedance characteristics even after duration".

In addition, the description of the present case generally states that "recent

nonaqueous electrolytic solution secondary batteries" are required to achieve "battery characteristics" at high level, and mentions the concrete items of the "battery characteristics" such as "initial capacity and input-output characteristics, battery internal impedance", and "capacity retention rate, input-output characteristics, and impedance characteristics after durability tests such as high-temperature storage test and cycle test." As examples of the conventional art which improves these items, the description of the present case states that a battery having a high discharge capacity in 60 °C charge/discharge cycle evaluation is obtained when lithium fluorosulfonate is used as an "electrolyte", and a solvent decomposition reaction is accelerated when "$LiPF_6$", etc. is used as an "electrolyte".

On the other hand, in the description of the present case, there is no statement which points out any concrete problems in the conventional art, and with regard to the items such as "initial battery characteristics and durability" and "excellent input-output characteristics and impedance characteristics even after duration", there is no statement which points out any concrete problems in the conventional art as well.

According to the above, it can be understood that the statement that a problem of Present Invention 4 is to provide "an additive to nonaqueous electrolytic solutions and a nonaqueous electrolytic solution" capable of providing nonaqueous electrolytic solution secondary batteries which maintain "initial battery characteristics and durability" and "excellent input-output characteristics and impedance characteristics even after duration" does not disclose that, based on the fact that there are concrete problems in these items of battery characteristics in the conventional art, to solve these concrete problems is made a problem, or to enhance or improve all of these items is made a problem, but discloses that to improve battery characteristics by enhancing or improving at least any of these items is made a problem.

B. From the statement of the description of the present case, it can be understood that "it had found that excellent characteristics could be expressed" "by incorporating lithium fluorosulfonate containing a specific amount of sulfate ion portion into a nonaqueous electrolytic solution", thus "the present invention" had been completed, and that "the inventors" of "the present invention" "considered that although the details are not clear, synergistic effects could be expressed by incorporating sulfate ion into lithium fluorosulfonate in a specific ratio."

In addition, the description of the present case shows that "lithium

fluorosulfonate" and "sulfate ion" were incorporated into a "basic electrolytic solution" in a predetermined ratio within a numerical range of Present Corrected Invention 4 to produce an electrolytic solution, and an "initial discharge capacity" of the produced electrolytic solution is superior to an "initial discharge capacity" of an electrolytic solution which does not contain either of "lithium fluorosulfonate" and "sulfate ion".

Further, in a "nonaqueous electrolytic solution" of Present Invention 4, it is natural to consider that "$LiPF_6$" is used as an "electrolyte", and that "lithium fluorosulfonate" and "sulfate ion portion" (lithium fluorosulfonate containing sulfate ion portion) are used as additives.

C. According to the above, it can be found that the description of the present case discloses that the problem of Present Corrected Invention 4 is to provide a nonaqueous electrolytic solution which improves battery characteristics such as initial discharge capacity as compared to a nonaqueous electrolytic solution which does not contain lithium fluorosulfonate and sulfate ion as additives.

Therefore, the decision of the present case erred in finding the problem of Present Corrected Invention 4.

(2) Lower limit value of a content of lithium fluorosulfonate

The description of the present case does not state working examples with regard to an electrolytic solution in which "a molar content of lithium fluorosulfonate is from 0.0005 mol/L or more and to less than 2.98×10^{-3} (0.00298) mol/L" included in Present Corrected Invention 4.

However, in Table 2, which shows the results of Test Example B, the description of the present case discloses that an electrolytic solution of the working example included in Present Corrected Invention 4 improves an initial generation capacity as compared to an electrolytic solution which does not contain either of lithium fluorosulfonate and sulfate ion, and that among the working examples, an initial generation capacity of Working Example 7 in which a content of lithium fluorosulfonate in an electrolytic solution is the lowest (the content of lithium fluorosulfonate is 2.98×10^{-3} mol/L, the content of sulfate ion is 9.21×10^{-7} mol/L) is 148.7 mAh/g, whereas an initial generation capacity of Comparative Example 2 which does not contain either of lithium fluorosulfonate and sulfate ion is 145.8 mAh/g. From such disclosed matters, it can be understood that a nonaqueous electrolytic solution to which lithium fluorosulfonate and sulfate ion are added as additives is able to improve an initial discharge capacity as compared to a nonaqueous electrolytic solution which does not contain either of them.

Further, "a lower limit value of a molar content of lithium fluorosulfonate is 0.0005 mol/L" included in Present Corrected Invention 4 is about one-sixth of the content of lithium fluorosulfonate, which is 2.98×10^{-3} mol/L (0.00298 mol/L), in Working Example 7, and it cannot be deemed that the lower limit is significantly less than in Working Example 7. In light of this, it can be found that a person ordinarily skilled in the art can recognize that even if an electrolytic solution whose content of lithium fluorosulfonate is 0.0005 mol/L is used, the above electrolytic solution improves an "initial discharge capacity" as compared to a nonaqueous electrolytic solution which does not contain lithium fluorosulfonate and sulfate ion as additives, and can solve the problem of Present Corrected Invention 4.

(3) With regard to Present Inventions 1 and 2 as well as Present Invention 4, it is found that the decision of the present case erred in finding the problems of Present Invention 1 and Present Invention 2, and that a person ordinarily skilled in the art can recognize that, based on the Detailed Description of the Invention in the description and common general technical knowledge, the problems of Present Invention 1 and Present Invention 2 can be solved through the whole of the matters for defining the invention.