Appeal decision

Appeal No. 2014-22719

Osaka, Japan
Appellant DAIWABO HOLDINGS CO. LTD.

Osaka, Japan
Appellant DAIWABO POLYTEC CO. LTD.

The case of appeal against an examiner's decision of refusal of Japanese Patent Application No. 2010-164078, entitled "Dust Removal Filter for Fuel, Dust Removal Filter Unit for Fuel and Dust Removal Unit for Oil Feeder" (the application published on February 9, 2012, Japanese Unexamined Patent Application Publication No. 2012-24668) has resulted in the following appeal decision:

Conclusion

The appeal of the case was groundless.

Reason

No. 1 History of the procedures

This application was filed on July 21, 2010, and the reason for refusal dated on April 14, 2014 was notified. Although an amendment was made on June 23 of the same year, a decision of refusal (hereinafter, referred to as "the Examiner's decision") was made on August 4 of the same year. And, subsequently, the appeal of the case against this Examiner's decision was demanded on November 7 of the same year, and, at the same time, an amendment (hereinafter, referred to as "the Amendment") was submitted.

No. 2 Regarding the Amendment (decision to dismiss the amendment)

[Conclusion]

The Amendment shall be dismissed.

[Reason]

1 Detail of Amendment

The Amendment has an amendment of Claim 1 as follows regarding the scope of claims for patent.

-Before amendment-

A dust removal filter for fuel comprising a cylindrical body formed by rolling a fiber aggregate into a cylindrical form, wherein

the fiber aggregate is a nonwoven fabric containing 50 mass% or more of polyoxymethylene-based polymer, and wherein

the nonwoven fabric includes 50 mass% or more of fiber having a fineness of 10-100 dtex, and includes 10 mass% or more of heat adhesive conjugated fiber including a first component, as a thermal adhesion component, including polyoxymethylene-based polymer A, and a second component including

polyoxymethylene-based polymer B, the first component being exposed 20% or more in length relative to a length of a peripheral surface of the fiber.

-After amendment- (Note for the body: underlines indicate amended portions)

A dust removal filter for fuel comprising a cylindrical body formed by rolling a fiber aggregate into a cylindrical form, wherein

the fiber aggregate is a nonwoven fabric containing 70 mass% or more of polyoxymethylene-based polymer, wherein

the nonwoven fabric is a nonwoven fabric only including fiber having a fineness of 10-100 dtex, and includes 70 mass% or more of heat adhesive conjugated fiber including a first component, as a thermal adhesion component, including polyoxymethylene-based polymer A, and a second component including polyoxymethylene-based polymer B, the first component being exposed 20% or more in length relative to a length of a peripheral surface of the fiber, and wherein

the nonwoven fabric is a nonwoven fabric made by adhering pieces of fiber constituting the nonwoven fabric with each other by the heat adhesive conjugated fiber.

2 Purpose of the Amendment

The amendment of Claim 1 limits, "a nonwoven fabric containing 50 mass% or more of polyoxymethylene-based polymer" that is a necessary matter to specify the invention described before the amendment to "a nonwoven fabric containing 70 mass% or more of polyoxymethylene-based polymer", and, similarly hereinafter, "includes 50 mass% or more of fiber having a fineness of 10-100 dtex" to "is nonwoven fabric only including fiber having a fineness of 10-100 dtex", and "includes 10 mass% or more of heat adhesive conjugated fiber" to "includes 70 mass% or more of heat adhesive conjugated fiber", and, further, the "nonwoven fabric" to "a nonwoven fabric made by adhering pieces of fiber constituting the nonwoven fabric with each other by the heat adhesive conjugated fiber". Therefore, it is recognized that, between the invention according to Claim 1 before amendment and the invention according to Claim 1 after amendment, the fields of industrial application and the problems to be solved are identical, and, accordingly, this falls under the category prescribed in Article 17-2(5)(ii) of the Patent Act; that is, so-called amendments for the purpose of restriction of the scope of claims for patent in a limited way.

3 Requirements for being independently patentable

Therefore, whether or not the appellant should be granted a patent for the invention specified by the matters described in Claim 1 after the amendment (hereinafter, referred to as "the Amended Invention") independently at the time of filing of the patent application will be discussed below.

(1) Described matters in the Cited Document

In Japanese Unexamined Patent Application Publication No. H07-213815, which is a publication distributed before the present application (hereinafter, referred to as "the Cited Document"), there are described the following matters.

[Claim 1] A liquid filtration device in which all component parts comprise thermoplastic polymer.

[Claim 2] The filtration device according to Claim 1, wherein the thermoplastic polymer is polyacetal.
[Claim 3] The filtration device according to Claim 1 or 2, comprising: a filter housing, a housing cover, a filter material, a screen, a supporting body, and, if adequate, other component parts.

[Claim 5] The filtration device according to any one or more of Claims 1-3, wherein the filter material exists in a form of a nonwoven fabric material.

[0002]
[Conventional Art] Pressure generation elements of an injection pump and an injection nozzle of an automobile are identical with each other in a point that they have an accuracy of a few thousandths of a millimeter. This means that there is a possibility that impurities in fuel having this size accelerate abrasion, and, in addition, endanger the functions of finely machined components. Therefore, when filtration is insufficient, a pump piston, a pressure valve, and an injection nozzle are damaged.

[0011] Thermoplastic polymer to be used needs to be of mineral oil resistance undoubtedly, and preferably is polyacetal (POM); that is, preferably oxymethylene homopolymer and oxymethylene copolymer, and terpolymer that contain an oxyethylene unit as a common structural unit. All polymers containing 50% or more of repeating units (CH2O) are included in the present invention. Polyacetal is publicly known for production of molded articles that mate accurately.

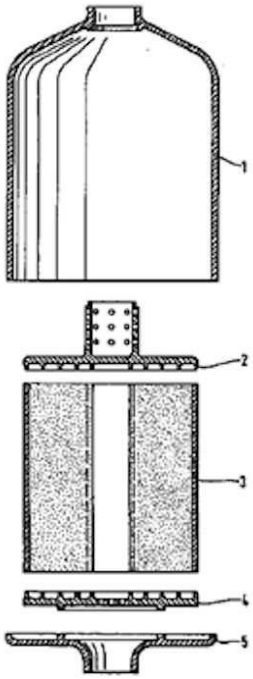
[0013] Manufacturing of solid molded articled needed for assembly of a filter is performed in another operation in advance by injection molding. Generally, manufacturing methods for manufacturing a nonwoven fabric web from thermoplastic, which are commonly used and are publicly known, are used for manufacturing of a filter material that is a "nonwoven fabric (non-woven)" material (nonwoven fabric web or felt). In accordance with a desired air hole size, a flow volume, and a filter thickness, after-treatment of a web can be performed by needling, calendaring, and short-time heating, for example.
[0014] In its component parts, joining between component parts of a filter according to the present invention, in which a joint part of a liquid sealing property needs to be provided between, in a case of a filter material; that is, a so-called filter insert, for example, a filter base material and a filter cover, and between a filter material, a filter supporting body and a housing, is performed by fusing. All fusing methods that have been developed for thermoplastic are appropriate in principle, and preferably a method of heating element welding is used.

[0017] Although a filtration device according to the present invention is appropriate for purifying mineral oil, and preferably fuel and heated oil, impurities can be removed also from other kinds of inorganic and organic liquids by using this filtration device.
[0018]
[Example] A liquid filtration device generally includes the following component parts (refer to FIG. 1 and FIG. 2).
[0019] 1. Housing

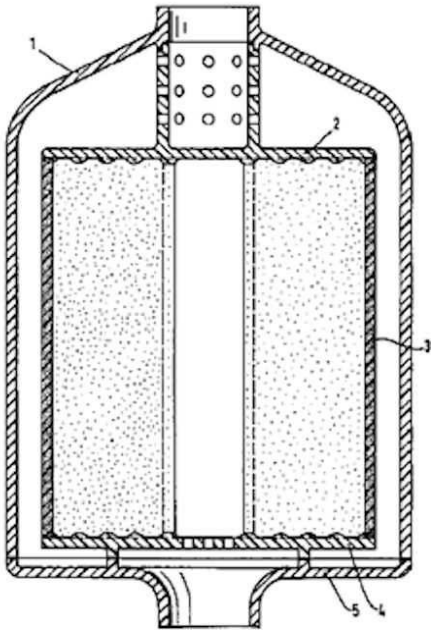
2. Filter cover,
3. Filter material including POM nonwoven fabric web,
4. Filter base material,
5. Housing cover, and,

when appropriate, another functional component, such as a water separator, or an accessory machine element added in some sort of use.

【図１】



【図２】



【図１】 [FIG. 1]
【図２】 [FIG. 2]

(2) Cited Invention

The Cited Document disclosed that, regarding a liquid filtration device in which all component parts comprise thermoplastic polymer (Claim 1), the thermoplastic polymer is polyacetal (Claim 2), one of the component parts is a filter material (Claim 3), and the filter material is of a form of a nonwoven fabric material (Claim 5), and, in addition, it is described that the filter material is used as a filter insert (paragraph 0014), and that the filtration device is used for purification of fuel (paragraph 0017).

In view of the above, it is recognized that the Cited Document discloses the following invention regarding a filtration filter insert for fuel (hereinafter, referred to as "Cited Invention").

"A filtration filter insert for fuel in a form of a nonwoven fabric comprising of polyacetal."

(3) Comparison between the inventions

The Amended Invention and the Cited Invention will be compared.

It is obvious to a person skilled in the art that a nonwoven fabric is a fiber aggregate, and that "dust removal" from fuel is performed by "filtration" of the fuel.

Furthermore, in the Cited Document, it is described that "polyacetal" of the Cited Invention is "oxymethylene homopolymer and oxymethylene copolymer, and terpolymer" (paragraph 0011), and, therefore, it can be said that this corresponds to "polyoxymethylene-based polymer" of the Amended Invention about which there is described, in the description of the present application, that it may be any of oxymethylene homopolymer and oxymethylene copolymer, and terpolymer (paragraphs 0017-0018), and that "a nonwoven fabric comprising polyacetal" of the Cited Invention corresponds to "a nonwoven fabric containing 70 mass% or more of polyoxymethylene-based polymer" of the Amended Invention.

In other words, within the Amended Invention,
the structure of "a dust removal filter for fuel comprising a fiber aggregate, wherein the fiber aggregate is a nonwoven fabric containing 70 mass% or more of polyoxymethylene-based polymer" is identical with that of the Cited Invention, but there are differences as follows.

The difference 1: regarding a fiber aggregate, it is "a cylindrical body formed by rolling it into a cylindrical form" according to the Amended Invention, whereas its shape is unclear according to the Cited Invention.

The difference 2: regarding a nonwoven fabric ", it only includes fiber having a fineness of 10-100 dtex" according to the Amended Invention, whereas a fineness is unclear according to the Cited Invention.

The difference 3: regarding a nonwoven fabric ", it includes 70 mass% or more of heat adhesive conjugated fiber including a first component, as a thermal adhesion component, including polyoxymethylene-based polymer A, and a second component including polyoxymethylene-based polymer B, the first component being exposed 20% or more in length relative to a length of a peripheral surface of the fiber, and is made by adhering pieces of fiber with each other by the heat adhesive conjugated fiber" according to the Amended Invention, whereas its fiber structure is unclear according to the Cited Invention.

(4) Judgment about the differences

Regarding the difference 1

In the Cited Document, there is described an example of a liquid filtration device in which a filter base material 3 including a cylindrical POM nonwoven fabric web is aligned between a filter cover 2 and a filter base material 4 (paragraphs 0018-0019, and FIG. 2).

In view of the above, it is recognized that a nonwoven fabric of the Cited Invention also forms a fiber aggregate of a cylindrical body, and, therefore, the difference 1 is not substantial.

Regarding the difference 2

In the Cited Document, it is described that impurities in fuel endanger the

functions of components machined to an accuracy of a few thousandths of a millimeter (paragraph 0002), and, thus, it is understood that, in the Cited Invention, impurities that should be filtered are of a size exceeding a few thousandths of a millimeter, that is, a few micrometers. Then, at least at the time of the filing of the present application, it was well-known that, with respect to fineness of polyoxymethylene fiber for a filter, fiber of a degree of "10 d to 2000 d (≅ 11-2200 dtex)" and "1-50 dtex" is preferable (refer to paragraph 0031 of Japanese Unexamined Patent Application Publication No. 2005-13829, and paragraph 0023 of Japanese Unexamined Patent Application Publication No. 2007-277757 and the like, if needed).

In view of the above, it can be said that to make a nonwoven fabric in the Cited Invention "only include fiber having a fineness of 10-100 dtex" is fineness selection that could be achieved easily by a person skilled in the art from the range of fineness deemed to be desirable for polyoxymethylene fiber for a filter in consideration of filtration accuracy of impurities of the above-mentioned size and a pressure loss.

Regarding the difference 3

In the Cited Document, it is described that, as one kind of after-treatment of a web for forming a nonwoven fabric, "it is performed by short time heating" (paragraph 0013). Then, when fiber is joined by heating so as to make it be a nonwoven fabric, it is well-known that fiber of a sheath-core structure in which polymer of a low melting point is used as an outer layer (sheath) so as to widen a fusion bonding temperature range and increase adhesion bonding strength (refer to the above-mentioned paragraph 0027 of Japanese Unexamined Patent Application Publication No. 2005-13829, and paragraph 0031 of Japanese Unexamined Patent Application Publication No. 2007-277757 and the like, if needed).

In view of the above, it is a selection of a fiber structure that could be achieved easily by a person skilled in the art for the purpose of expanding a fusion bonding temperature range at the time of manufacturing, and increasing adhesion bonding strength after manufacturing to, in order to manufacture a nonwoven fabric in the Cited Invention by short time heating of a web, make the nonwoven fabric "include a heat adhesive conjugated fiber of a sheath-core structure including, as an outer layer, the first component, as a thermal adhesion component, including the polyoxymethylene-based polymer A, and, as an inner layer, the second component including the polyoxymethylene-based polymer B", and make it, after short time heating, "be made by adhering pieces of fiber with each other by the heat adhesive conjugated fiber". Also, it is nothing but a design-related matter that a person skilled in the art would usually take into consideration to make, on this occasion, exposure of the first component be 20% or more of the length of the peripheral surface of the fiber, and the proportion of the conjugated fiber be 70 mass% or more.

Then, in the Cited Invention, there is no particular difficulty for a person skilled in the art in arriving at the differences 2 and 3 together, and there is no effect caused by the Amended Invention that a person skilled in the art cannot predict on the basis of the statements of the Cited Document and the well-known art.

(5) Summary

As mentioned above, the Amended Invention could be easily invented by a

person skilled in the art based on the invention according to the Cited Document distributed prior to the present application and the well-known art, and, therefore, the appellant should not be granted a patent independently at the time of the patent application under the provisions of Article 29(2) of the Patent Act.

Accordingly, it cannot be said that the amendment as to Claim 1 complies with the provisions of Article 126(5) of the Patent Act as applied mutatis mutandis pursuant to the provisions of Article 17-2(6) of the same Act, and, therefore, the Amendment should be dismissed under the provisions of Article 53(1) of the same Act which is applied mutatis mutandis by replacing certain terms pursuant to the provisions of Article 159(1) of the same Act.

No. 3 Reason of the Examiner's decision

The invention according to Claim 1 of the present application (hereinafter, referred to as "the Invention") is recognized as one specified by the matters described in Claim 1 of the scope of claims for patent that was amended by the amendment dated Jun. 23, 2014 because the Amendment has been dismissed (refer to "-Before amendment-" of "No. 2, 1").

With respect to this, one of the reasons for the Examiner's decision is that "the appellant should not be granted a patent for the Invention in accordance with the provisions of Article 29(2) of the Patent Act because it could be easily invented by a person skilled in the art based on the invention described in the Cited Document".

Since the Amended Invention that is made by restricting the Invention could be easily invented by a person skilled in the art based on the invention disclosed in the Cited Document and the well-known art as has been described in "No. 2, 3(5)", it can be said that the Invention also could be easily invented by a person skilled in the art based on the invention according to the Cited Document and the well-known art.

No. 4 Closing

As mentioned above, the appellant should not be granted a patent for the Invention in accordance with the provisions of Article 29(2) of the Patent Act.

Accordingly, the present application falls under the category of the prescriptions of Article 49(1)(ii) of the same Act, and, therefore, it should be rejected without examining other reasons.

Therefore, the appeal decision shall be made as described in the conclusion.

December 10, 2015

Chief administrative judge: NIIDA, Tomoo
Administrative judge: OHASHI, Kenichi
Administrative judge: MAMADA, Tadahiro