Appeal Decision

Appeal No. 2019-16689

Appellant Dexerials Corporation

Patent Attorney Tajime International Patent Firm

The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2018-121397, entitled "Anisotropic conductive film and method for manufacturing the same", [the application published on November 22, 2018: Japanese Unexamined Patent Application Publication No. 2018-186090], has resulted in the following appeal decision:

Conclusion

The appeal of the case was groundless.

Reason

No. 1 History of application

The present application is a divisional application filed on June 26, 2018 from Japanese Patent Application No. 2016-198884 (hereinafter, referred to as "the Original Application"), which is a divisional application filed on October 7, 2016 from Japanese Patent Application No. 2013-177080 (hereinafter, referred to as "the Previous Original Application") filed on August 28, 2013 (Priority Claim on August 29, 2012), a request for examination was made on June 27, 2018 and, at the same time, an amendment was submitted, reasons for refusal were notified on March 12, 2019, a written request for extension of period to the effect that the submission period is extended by two months was submitted on May 17, 2019, and an amendment was submitted on July 17, 2019; however, a decision of refusal was made on September 3, 2019 (date of dispatch: September 10, 2019), and, against this, an appeal against an examiner's decision of refusal was submitted on December 10, 2019, and, at the same time, an amendment was submitted, reasons for refusal were notified by the body on March 12, 2020, and a written opinion was submitted on May 14, 2020.

No. 2 Regarding the Original Application

1 History of application of the Original Application

Regarding the Original Application, reasons for refusal were notified on June 26, 2017, a written opinion and an amendment were submitted on August 31, 2017,

reasons for refusal (the final reasons for refusal) due to Reason 1 (new matters: Article 17-2(3) of the Patent Act), Reason 2 (inventive step: Article 29(2) of the Patent Act) and Reason 3 (requirements for support: Article 36(6)(i) of the Patent Act) were notified on November 27, 2017, a written opinion and an amendment were submitted on January 26, 2018,

the amendment by the above-mentioned written amendment dated January 26, 2018 was dismissed by determination on March 5, 2018, and, in conjunction with this, a decision of refusal was made on the same day due to the above-mentioned Reasons 1-3 described in the above-mentioned reasons for refusal on November 27, 2017, and the decision of refusal has already become final.

2 Regarding Reason 2 of the decision of refusal against the Original Application

Among the above-mentioned reasons of the decision of refusal against the Original Application, an outline of Reason 2 is as follows.

It cannot be said that the matters described in the description, the scope of claims, or the drawings of the Original Application after amendment made by the amendment on August 31, 2017 are within the scope of the matters described in the description, the scope of claims, or the drawings of just before the division of the Previous Original Application, and, in a similar fashion, it cannot be said that the matters described in the description, the scope of claims, or the drawings of the Original Application after the above-mentioned amendment are within the scope of the matters described in the description, the scope of claims, or the drawings at the initial application of the Previous Original Application; therefore, the Original Application does not meet the requirements for Division of Application, and, as a result, retroaction of filing date cannot be approved.

Then, since the inventions according to Claims 1-7 of the Original Application could have been invented with ease by a person ordinarily skilled in the art in the technical field of the invention before the application was filed based on the inventions described in the following Publications 1-4 distributed in Japan or abroad before the application was filed, or on the inventions that were made available to public through electric communication lines in Japan or abroad before the application was filed, the Applicant should not be granted a patent for these in accordance with the provisions of Article 29(2) of the Patent Act.

1. Japanese Unexamined Patent Application Publication No. 2016-103476

2. National Publication of International Patent Application No. 2002-519473
3. Japanese Unexamined Patent Application Publication No. 2014-130824
4. Japanese Unexamined Patent Application Publication No. 2008-34232

3 Regarding the application date of the Original Application

According to the above-mentioned "2", in the procedure of the Original Application, there is indicated a judgment that the Original Application dose not satisfy the requirements for division relative to the Previous Original Application, and thus it can be said that, under the judgment, the decision of refusal of the Original Application has already become final (see Japan Patent Office, " Examination Handbook for Patent and Utility Model", Part VI, Section 1 "6102 Points to note in Examination of Grandchild Application", (2) (i)).

Therefore, the Original Application is not one whose application date is retroactive to August 28, 2013, which is the application date of the Previous Original Application, and thus the application date of the Original Application is October 7, 2016, which is the actual application date of the Original Application.

No. 3 The Invention

The inventions according to Claims 1-8 of the present application (hereinafter, referred to as "Invention 1" to "Invention 8") are ones that are specified by the matters recited in Claims 1-8 of the scope of claims amended by the amendment of December 10, 2019, and Invention 1 is as follows.

"[Claim 1]

An anisotropic conductive film comprising: an insulating resin layer containing a thermoplastic resin; and a conductive particle group composed of a plurality of conductive particles formed in a single layer on one surface of the insulating resin layer, wherein

the conductive particle group has a discontinuous, independent, regular pattern, wherein

the thermoplastic resin is present at a position of at least the conductive particle group in the insulating resin layer, and wherein

the plurality of conductive particles constituting the conductive particle group are not in contact with each other and have a distance from each other, and an interparticle distance between conductive particles within the conductive particle group is 0.5-10 μm."

No. 4 Regarding the application date of the present application

As described in the above "No. 2", the application date of the Original Application is October 7, 2016, and thus, even if the present application satisfies all of the requirements for division relative to the Original Application, and, along with this, even if the present application satisfies all of the substantive requirements among the requirements for division relative to the Previous Original Application, the application date of the present application retroacts only to October 7, 2016, which is the application date of the Original Application.

No. 5 Reasons for refusal

The reason for refusal notified by the body on March 12, 2020 is as follows.

Inventions 1 to 8 are identical with the inventions described in the following Cited Document 1 distributed or made available to public in Japan or abroad through electric communication lines before the application of the present application, and, therefore, fall under Article 29(1)(iii) of the Patent Act, and the Appellant should not be granted a patent for these.

Cited Document 1: Japanese Unexamined Patent Application Publication No. 2014-63729

No. 6 Description in Cited Document and Cited Invention

1 The described matters and the like of Cited Document 1

In Cited Document 1, which is a publication distributed on April 10, 2014 before October 7, 2016 that is the application date of the Original Application, and is a publication of the Previous Original Application, there are described the following matters. (The underlines were added by the body.)

(1) "[Claim 8]

An anisotropic conductive film comprising: a conductive particle-containing layer in which a coated conductive particle coated with a dried film of a diluted thermoplastic resin solution is fixed in a single layer on a dried coating film of the diluted thermoplastic resin solution; and an insulating resin layer, the conductive particle-containing layer and the insulating resin layer being laminated together."

(2) "[Claim 10]

The anisotropic conductive film according to claim 8 or 9, wherein an interparticle distance between coated conductive particles is 1 to 6 μm.

[Claim 11]

The anisotropic conductive film according to any one of claims 8 to 10, wherein a plurality of conductive particles form a conductive particle group in a regular pattern."

(3) "[0014]

<<Manufacturing Method A of Anisotropic Conductive Film of the Present Invention>>

FIG. 1 is a process explanatory drawing of the manufacturing method of the anisotropic conductive film of one example of the present invention. Each step will be described below.

[0015]

<Step of Preparing Particle Dispersion Solution>

First, as shown in FIG. 1(a), in this example, a particle dispersion solution 1 in which conductive particles 3 are dispersed in a diluted thermoplastic resin solution 2 for forming a film by drying is prepared."

(4) "[0020]

The solid content concentration of the thermoplastic resin in the diluted thermoplastic resin solution 2 can be appropriately set in order to set the interparticle distance of the conductive particles in the anisotropic conductive film to a predetermined size. In the anisotropic conductive film of the present invention, the interparticle distance L2 (FIG. 1(c)) of the coated conductive particles 4 in which the conductive particles 3 are coated with the dried film 6b of the thermoplastic resin is preferably 0.5-10 μm from a point of view of securing insulation, and is, more preferably, 1-6 μm, and, therefore, the solid content concentration of the thermoplastic resin in the diluted thermoplastic resin solution 2 is preferably 0.1-30 wt%, and is, more preferably, 2-15 wt%."

(5) "[0025]

<Step of Drying Coating Film of Particle Dispersion Solution>

Next, the coating film of the particle dispersion solution 1 on the release substrate 5 is dried. As a result, there is formed a conductive particle-containing layer 7 in which, to the dried coating film 6a of the diluted thermoplastic resin solution on the release substrate 5, the coated conductive particles 4 in which the conductive particles 3 are coated with the dried film 6b of the diluted thermoplastic resin solution are fixed in a single layer in a manner that the particles do not overlap with each other in the thickness direction of the coating film (the same figure, (c)). In the conductive

particle-containing layer 7, the coated conductive particles 4 are uniformly dispersed on the dried coating film 6a of the diluted thermoplastic resin solution, and non-uniformity in the interparticle distance is significantly suppressed."

(6) "[0027]

<Step of Laminating Insulating Resin Layer>

Next, by laminating the insulating resin layer 8 on the conductive particle-containing layer 7, the anisotropic conductive film 10 of the example in which the conductive particle-containing layer 7 and the insulating resin layer 8 are laminated can be obtained (the same figure, (d))."

(7) "[0033]

<<Manufacturing Method B of Anisotropic Conductive Film of the Present Invention>>

The anisotropic conductive film of the present invention can also be manufactured by forming a conductive particle-containing layer using a transfer mold having a regular pattern, for example, transfer molds 30A or 30B as shown in FIG. 3A or 3B. As a result, it becomes easy to secure the interparticle distance, and it is possible to widen the interparticle distance pitch.

[0034]

FIG. 3A is a top view of the transfer mold 30A in which the linear grooves 31 are formed, and FIG. 3B is a top view of the transfer mold 30B in which the square island-shaped concave portions 32 are formed. As shown in FIG. 3C, each of the grooves 31 or the concave portions 32 of the cross section A-A of these transfer molds has, for example, a rectangular shape (hereinafter referred to as a recess 41) having a width of 5 to 200 μm and a depth of 5 to 40 μm on one side of a transfer mold 40 (the transfer molds 3A and 3B are collectively called the transfer mold 40). When manufacturing an anisotropic conductive film using such a transfer mold, it is preferable to take the process as will be described below. Description will be given based on the cross-sectional view. Although the shape of the transfer mold can be designed arbitrarily, it is desirable, in order to prevent short circuit more reliably, to constitute a conductive particle group from a plurality of conductive particles, and to form such conductive particle group in a discontinuous, independent pattern shape such as a linear shape, island-like shape, a point shape, and the like. Moreover, this shape is not limited to a straight line. The shortest distance in the pattern shape only has to be a space where one or two coated particles can exist. This is because, in the case of a space of a degree in which one coated particle is contained, the frequency of appearance

of a missing region where a particle does not exist increases. Using a pattern in this manner effectively acts to improve the reliability in securing a reliable insulating region. Also, from a production point of view, the use of patterns makes it easier to perform inspections, and has the advantage of improving quality by facilitating defect extraction.
[0035]
<Step of Preparing Particle Dispersion Solution>

First, as shown in FIG. 1(a), also in this example, the particle dispersion solution 1 in which the conductive particles 3 are dispersed in the diluted thermoplastic resin solution 2 for forming a film by drying is prepared.
[0036]
<Step of Coating Particle Dispersion Solution to Transfer Mold>

A coating film of the particle dispersion solution 1 having a predetermined thickness is formed on the transfer mold 40, and the particle dispersion solution 1 on the surface of the transfer mold 40 is scraped off by a known wiper (Figure 4A). By this, the diluted thermoplastic resin solution 2 in which the conductive particles 3 are dispersed is filled in the recess 41. Although the number of conductive particles 3 entering the recess 41 varies depending on the size of the conductive particles 3, the width and depth of the recess 41, the concentration of the conductive particles 3 in the particle dispersion solution, and the like, typically a plurality of conductive particles 3 are filled in a single layer to form a conductive particle group 43.
[0037]
<Step of Transferring Conductive Particle Group 43 to Release Film, and Drying>

Next, the release film 50 is placed on the surface of the transfer mold 40 where the recess 41 is formed and pressed (FIG. 4B), and the coated conductive particle group 43 is transferred to the release film 50 (Figure 4C) to be dried. Thus, a linear or island-shaped coated conductive particle group pattern 45 in which the conductive particles 3 are fixed by the thermoplastic resin 44 is formed on the release film 50 (FIG. 4D).
[0038]
<Step of Laminating Insulating Resin Layer>

Next, the insulating resin layer 8 is laminated on the coated conductive particle group pattern 45, and the release film 50 is removed, thereby enabling to obtain the anisotropic conductive film 46 of the example in which the coated conductive particle group pattern 45 and the insulating resin layer 8 are laminated (FIG. 4E)."

(8) In view of the descriptions of the paragraphs [0035]-[0038] of the above-mentioned

(7) and [FIG. 4D] and [FIG. 4E] together, it can be understood that the thermoplastic resin 44 exists at a position where the conductive particle group 43 exists.

2 Cited Invention

When the described matters of the above-mentioned 1(1)-(7) and the recognized matters of the above-mentioned 1(8) are put together and organized in conformity to the way of the citation of Invention 1, it is recognized that the following Cited Invention is described in Cited Document 1.

[Cited Invention]

"An anisotropic conductive film 46 having the insulating resin layer 8 laminated on the coated conductive particle group pattern 45 in which the conductive particle group 43 having a plurality of conductive particles 3 filled in a single layer is fixed by the thermoplastic resin 44, wherein

the coated conductive particle group pattern 45 is formed in a discontinuous, independent, regular pattern shape of a linear shape or island shape, wherein

the thermoplastic resin 44 exists at a position where the conductive particle group 43 exists, and wherein

the plurality of conductive particles 3 constituting the conductive particle group 43 are not in contact with each other and have a distance from each other, and an interparticle distance between the conductive particles 3 within the conductive particle group 43 is 0.5-10 μm."

No. 6 Comparison / judgment

Invention 1 and Cited Invention will be compared.

Regarding "the thermoplastic resin 44" of Cited Invention, since it is a common general technical knowledge that resin for fixing a conductive particle in an anisotropic conductive film has an insulation property, "the thermoplastic resin 44" and "the insulating resin layer 8" of Cited Invention correspond to "insulating resin containing a thermoplastic resin" of Invention 1.

Since it can be said that "the conductive particle group 43 having a plurality of conductive particles 3 filled in a single layer" of Cited Invention is located on a surface of the thermoplastic resin 44, as viewed from its manufacturing method (refer to paragraph [0036] of Cited Document 1), it corresponds to "a conductive particle group composed of a plurality of conductive particles formed in a single layer on one surface"

of the insulating resin layer of Invention 1.

"An anisotropic conductive film 46" of Cited Invention corresponds to "an anisotropic conductive film" of Invention 1.

Since "the coated conductive particle group pattern 45" of Cited Invention has "the conductive particle group 43", "the coated conductive particle group pattern 45 is formed in a discontinuous, independent, regular pattern shape of a linear shape or island shape" of Cited Invention corresponds to "the conductive particle group has a discontinuous, independent, regular pattern" of Invention 1.

"The thermoplastic resin 44 exists at a position where the conductive particle group 43 exists" of Cited Invention corresponds to "the thermoplastic resin is present at a position of at least the conductive particle group in the insulating resin layer" of Invention 1.

"The plurality of conductive particles 3 constituting the conductive particle group 43 are not in contact with each other and have a distance from each other, and an interparticle distance between the conductive particles 3 within the conductive particle group 43 is 0.5-10 μm" of Cited Invention corresponds to "the plurality of conductive particles constituting the conductive particle group are not in contact with each other and have a distance from each other, and an interparticle distance between conductive particles within the conductive particle group is 0.5-10 μm" of Invention 1.

From the above, Invention 1 and Cited Invention are identical in the following point.

"An anisotropic conductive film comprising: an insulating resin layer containing a thermoplastic resin; and a conductive particle group composed of a plurality of conductive particles formed in a single layer on one surface of the insulating resin layer, wherein

the conductive particle group has a discontinuous, independent, regular pattern, wherein

the thermoplastic resin is present at a position of at least the conductive particle group in the insulating resin layer, and wherein

the plurality of conductive particles constituting the conductive particle group are not in contact with each other and have a distance from each other, and an

interparticle distance between conductive particles within the conductive particle group is 0.5-10 μm."

Then, Cited Invention has all the matters specifying the invention of Invention 1.

Therefore, Invention 1 is an invention described in Cited Document 1 (Cited Invention).

No. 7 Closing

As above, Invention 1 is an invention described in Cited Document 1 distributed or made available to public through electric communication lines in Japan or abroad before the application was filed, and falls under Article 29(1)(iii) of the Patent Act, and thus the Appellant should not be granted a patent for that; therefore, without examining Inventions 2-8, the appeal of the case is found to be groundless.

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

October 12, 2020

Chief administrative judge: HIRATA, Nobukatsu
Administrative judge: UCHIDA, Hiroyuki
Administrative judge: OZAKI, Kazuhiro