Appeal decision

Appeal No. 2014-10272

Tokyo, Japan
Appellant TOPPAN PRINTING CO. LTD.

The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2009-209896, entitled "Transparent conductive laminated body, manufacturing method thereof and capacitive touch panel" (the application published on Mar. 24, 2011, Japanese Unexamined Patent Application Publication No. 2011-60617) has resulted in the following appeal decision.

Conclusion

The appeal of the case was groundless.

Reason

No. 1 History of the procedures

The present application was filed on Sep. 11, 2009, and, against a notice of reasons for refusal dated Sep. 27, 2013, amendment was submitted on Nov. 25, 2013. Then, a decision of refusal was issued on Feb. 28, 2014, and, against this, an appeal was requested on Jun. 3, 2014, and, in conjunction with this, amendment was submitted on the same day.

No. 2 Decision to dismiss amendment

[Conclusion of Decision to Dismiss Amendment]

The amendment dated on Jun. 3, 2014 (hereinafter, referred to as "Amendment of the case") shall be dismissed.

[Reason]

1 Detail of Amendment of the case

Amendment of the case is one that amends the description and the scope of claims, and the claims before and after Amendment of the case are as follows.

- Before amendment

"[Claim 1]

A manufacturing method of a transparent conductive laminated body, the method comprising:

a step of forming an optical function layer over at least one surface of a transparent substrate;

a step of forming a transparent conductive film over said optical function layer;

a patterning step of forming a conductive pattern area and a nonconductive pattern area in said transparent conductive film; and

a step of forming an organic layer on surfaces of said conductive pattern area and said nonconductive pattern area,

wherein said organic layer includes a UV curable resin layer, and

wherein a film thickness of said organic layer is in a μm range from 1 μm or more to 10 μm or less.

[Claim 2]

The manufacturing method of a transparent conductive laminated body according to claim 1, wherein a film thickness of said transparent conductive film is in a range of 10 to 50 nm.

[Claim 3]

A transparent conductive laminated body manufactured using the method according to claim 1 or 2.

[Claim 4]

A capacitive touch panel using a transparent conductive laminated body according to claim 3 as an electrode material.

[Claim 5]

A transparent conductive laminated body, comprising:

a transparent substrate;

an optical function layer formed on at least one surface of said transparent substrate;

a transparent conductive film formed over said optical function layer;

a conductive pattern area and a nonconductive pattern area formed on said transparent conductive film; and

an organic layer formed on surfaces of said conductive pattern area and said nonconductive pattern area,

wherein said organic layer includes a UV curable resin layer, and

wherein a film thickness of said organic layer is in a μm range from 1 μm or more to 10 μm or less.

[Claim 6]

The transparent conductive laminated body according to claim 5, wherein a film thickness of said transparent conductive film is in a range of 10 to 50 nm.

[Claim 7]

The transparent conductive laminated body according to claim 5 or 6, wherein surface hardness of said organic layer is 3H or more.

[Claim 8]

The transparent conductive laminated body according to any one of claims 5 to 7, wherein total light transmittance of each of said conductive pattern area and said nonconductive pattern area is 90% or more.

[Claim 9]

The transparent conductive laminated body according to any one of claims 5 to 8, wherein transmission hue b* of both of said conductive pattern area and said nonconductive pattern area in an L*a*b chromaticity system is 3.0 or less.

[Claim 10]

The transparent conductive laminated body according to any one of claims 5 to 9, wherein a total light transmittance difference between said conductive pattern area and said nonconductive pattern area is 1.0% or less, and a transmission hue b* difference between said conductive pattern area and said nonconductive pattern area in an L*a*b chromaticity system is 1.5 or less.

[Claim 11]

A capacitive touch panel using a transparent conductive laminated body according to any one of claims 5 to 10 as an electrode material."

- After amendment

"[Claim 1]

A manufacturing method of a transparent conductive laminated body, the method comprising:

a step of forming an optical function layer on at least one surface of a transparent substrate;

a step of forming a transparent conductive film over said optical function layer;

a patterning step of forming a conductive pattern area and a nonconductive pattern area in said transparent conductive film; and

a step of forming an organic layer on surfaces of said conductive pattern area and said nonconductive pattern area,

wherein said optical adjustment layer comprises at least one layer, said layer comprising a material selected from the group consisting of magnesium oxide, silicon

dioxide, magnesium fluoride, calcium fluoride, cerium fluoride, and aluminum fluoride, and having a film thickness of 50 nm or more,

wherein said organic layer comprises a UV curable resin layer,

and a film thickness of said organic layer is in a range from 1 μm or more to 10 μm or less.

[Claim 2]

The manufacturing method of a transparent conductive laminated body according to claim 1, wherein a film thickness of said transparent conductive film is in a range of 10 to 50 nm.

[Claim 3]

A transparent conductive laminated body manufactured using a method according to claim 1 or 2.

[Claim 4]

A capacitive touch panel using a transparent conductive laminated body according to claim 3 as an electrode material.

[Claim 5]

A transparent conductive laminated body, comprising:

a transparent substrate;

an optical function layer formed on at least one surface of said transparent substrate;

a transparent conductive film formed over said optical function layer;

a conductive pattern area and a nonconductive pattern area formed in said transparent conductive film, and

an organic layer formed on surfaces of said conductive pattern area and said nonconductive pattern area,

wherein said optical adjustment layer comprises at least one layer, said layer comprising a material selected from the group consisting of magnesium oxide, silicon dioxide, magnesium fluoride, calcium fluoride, cerium fluoride, and aluminum fluoride, and having a film thickness of 50 nm or more,

wherein said organic layer comprises a UV curable resin layer,

and a film thickness of said organic layer is in a range from 1 μm or more to 10 μm or less.

[Claim 6]

The transparent conductive laminated body according to claim 5, wherein a film thickness of said transparent conductive film is in a range of 10 to 50 nm.

[Claim 7]

The transparent conductive laminated body according to claim 5 or 6, wherein surface hardness of said organic layer is 3H or more.

[Claim 8]

The transparent conductive laminated body according to any one of claims 5 to 7, wherein total light transmittance of both of said conductive pattern area and said nonconductive pattern area is 90% or more.

[Claim 9]

The transparent conductive laminated body according to any one of claims 5 to 8, wherein transmission hue b* of both of said conductive pattern area and said nonconductive pattern area in an L*a*b chromaticity system is 3.0 or less.

[Claim 10]

The transparent conductive laminated body according to any one of claims 5 to 9, wherein a total light transmittance difference between said conductive pattern area and said nonconductive pattern area is 1.0% or less, and a transmission hue b* difference in an L*a*b chromaticity system is 1.5 or less.

[Claim 11]

A capacitive touch panel using a transparent conductive laminated body according to any one of claims 5 to 10 as an electrode material."

2 Summarization of amended matters

The amendments according to Amendment of the case as to the scope of claims were organized, and these are as follows.

• Amended matter 1

To conduct amendment to add, to claim 1 before amendment, "said optical adjustment layer comprises at least one layer, said layer comprising a material selected from the group consisting of magnesium oxide, silicon dioxide, magnesium fluoride, calcium fluoride, cerium fluoride, and aluminum fluoride, and having a film thickness of 50 nm or more,".

• Amended matter 2

To amend "a film thickness of said organic layer is in a μm range from 1 μm or more to 10 μm or less" of claim 1 before amendment to "a film thickness of said organic layer is in a range from 1 μm or more to 10 μm or less".

• Amended matter 3

To conduct amendment to add, to claim 5 before amendment, "said optical adjustment layer comprises at least one layer, said layer comprising a material selected from the group consisting of magnesium oxide, silicon dioxide, magnesium fluoride,

calcium fluoride, cerium fluoride, and aluminum fluoride, and having a film thickness of 50 nm or more,".

• Amended matter 4

To amend "a film thickness of said organic layer is in a μm range from 1 μm or more to 10 μm or less" of claim 5 before amendment to "a film thickness of said organic layer is in a range from 1 μm or more to 10 μm or less".

3 Propriety of Amendment of the case

Hereinafter, about the amended matters 1 and 3, as to whether or not these are made within the scope of matters described in the description and drawings originally attached to the application of the present application (hereinafter referred to as "the originally attached description etc.") will be examined.

Meanwhile, the statement of "said optical adjustment layer" in amended matters 1 and 3 is recognized as the error of "said optical function layer" from the relation between the statement of "a step of forming an optical function layer on at least one surface of a transparent substrate; a step of forming a transparent conductive film over said optical function layer;" in claim 1 after amendment, and the statement of "an optical function layer formed on at least one surface of said transparent substrate; a transparent conductive film formed over said optical function layer;" in claim 5 after amendment.

(1) Statements in the originally attached description etc.

In the originally attached description etc., there are the following statements about "optical function layer" in the invention according to the present application. (Note by the body: the underlines were added by the body. The same shall apply hereinafter)

A "[0004]

The present invention has been made in view of such weak points of the prior art, and its objective is to provide a transparent conductive laminated body that is advantageous in making pattern shape less noticeable and a manufacturing method thereof, and a capacitive touch panel.

[Means for Solving the Problem]

[0005]

As means for solving the problem, the invention according to claim 1 is a manufacturing method of a transparent conductive laminated body, the method comprising: a step of forming an optical function layer on at least one surface of a

transparent substrate; a step of forming a transparent conductive film over said optical function layer; a patterning step of forming a conductive pattern area and a nonconductive pattern area in said transparent conductive film; and a step of forming an organic layer on surfaces of said conductive pattern area and said nonconductive pattern area.

...

[0010]

The invention according to claim 6 is of a transparent conductive laminated body, comprising: a transparent substrate; an optical function layer formed on at least one surface of said transparent substrate; a transparent conductive film formed over said optical function layer; a conductive pattern area and a nonconductive pattern area formed in said transparent conductive film; and an organic layer formed on surfaces of said conductive pattern area and said nonconductive pattern area."

B "[0021]

FIG. 1 is a cross sectional view of a transparent conductive laminated body showing an example of a manufacturing process of the present invention.

UV curable resin layers 12 and 12' are coated on the both surfaces of a transparent base material 11 as a part of an optical function layer and then hardened, and, next, on the UV curable resin layer 12 that is one of the UV curable resin layers, an optical function layer 13 and a transparent conductive film 14 are formed. Next, the pattern area of the transparent conductive film 14 is etched, and, finally, a UV curable resin 15 is coated on the transparent conductive film 14 to which patterning has been performed and then made to be hardened to obtain a transparent conductive laminated body 10.

In other words, the UV curable resin layers 12 and 12' constituting a part of optical function layer are formed on the both surfaces of the transparent base material 11 serving as a transparent substrate, and on the UV curable resin layer 12 that is one of the UV curable resin layers the optical function layer 13 constituting the remaining part of the optical function layer is formed.

Therefore, in the present embodiment, an optical function layer of the scope of claims is composed of the UV curable resin layer 12 and the optical function layer 13, and the UV curable resin layer 12' that is the other of the UV curable resin layers. ...

...

[0023]

The UV curable resin layers 12 and 12' constituting a part of the optical function layer and the UV curable resin 15 serving as an organic layer are not limited in

particular, if these have transparency, and appropriate hardness and mechanical strength.

In particular, acrylic of an ultraviolet light irradiation hardening type or resin of an organic silicon system is preferred.

It is more preferred that the refractive index of such resin is equivalent or approximate to that of the transparent resin substrate 11, and it is selected accordingly from a value about 1.45 to 1.65.

It is preferred that the film thicknesses of the UV curable resin layers 12, 12', and 15 are in a range of 1 to 10 μm for the sake of transparency, coating accuracy, and handling.

Here, although UV curable resin has been cited, instead of this, resin that hardens by irradiation of ionizing radiation or thermosetting resin and the like can be used.

[0024]

In particular, the UV curable resin layers 12 and 12' constituting a part of an optical function layer may have an optical property in order to resolve a problem that the pattern shapes of the conductive pattern area and nonconductive pattern area formed in the transparent conductive film 14 stand out to cause degradation of visibility.

A method to give an optical property includes a method to control refractive indexes of the UV curable resin layers 12 and 12', and a method to add filler and the like to the UV curable resin layers 12 and 12', and so on.

[0025]

When an inorganic compound is used as the optical function layer 13, a material such as oxide, sulfide, fluoride, and nitride can be used.

Thin films made of the above-mentioned inorganic compounds have different refractive indexes according to the material thereof, and therefore, by forming such thin films of different refractive indexes with particular film thicknesses, it is possible to adjust an optical property.

Meanwhile, here, although the optical function layer 13 has been made to be a single layer using an inorganic compound, it may be of a plurality of layers in accordance with a desired optical property.

[0026]

A material of a low refractive index for forming the optical function layer 13 includes magnesium oxide (1.6), silicon dioxide (1.5), magnesium fluoride (1.4), calcium fluoride (1.3 - 1.4), cerium fluoride (1.6), aluminum fluoride (1.3) and the like.

In addition, as a material of a high refractive index for forming the optical function layer 13, titanium oxide (2.4), oxidized zirconium (2.4), zinc sulfide (2.3),

tantalum oxide (2.1), zinc oxide (2.1), indium oxide (2.0), niobium oxide (2.3), and tantalum oxide (2.2) are cited. In this regard, however the above numerical values within parentheses indicate refractive indexes."

C "[0035]

(Example 1)

Next, examples will be described.

Using PET (125 μm) as a transparent substrate, UV curable resin (refractive index n = 1.50) serving as an optical function layer was applied on its both sides, TiO_2 (n = 2.23) of 12 nm thickness serving as an optical function layer, SiO_2 (n = 1.46) of 55 nm thickness serving as an optical function layer, and ITO (n = 2.03) of 30 nm thickness serving as a transparent conductive film are formed in this order on the surface of one of the UV curable resin layers by a sputtering method.

After cutting the film formed in this way, patterning of the ITO is performed by a photolithographic method to form a conductive pattern area and a nonconductive pattern area.

Finally, UV curable resin (n = 1.50) of 2 μm serving as an organic layer is spin coated, and a transparent conductive laminated body was produced.

[0036]

Total light transmittance (JIS-K7105) of the conductive pattern area of this transparent conductive laminated body was 90.6% and its transmission hue b* in the L*a*b chromaticity system was 1.5, and total light transmittance (JIS-K7105) of the nonconductive pattern area was 90.7% and its transmission hue b* in the L*a*b chromaticity system was 2.3, and, in this way, a transparent conductive laminated body of high transmittance and high transparency, and whose pattern area is not noticeable was obtained.

...

According to the present embodiment, an optical function layer is formed at least one surface of a transparent substrate, a conductive pattern area and a nonconductive pattern area are formed on this optical function layer, and an organic layer is formed on the surfaces of the conductive pattern area and the nonconductive pattern area.

Therefore, thanks to an effect of light interference, it is advantageous for obtaining a transparent conductive laminated body which has high transmittance and high transparency, and a pattern area of which is not noticeable."

(2) About whether there is addition of new matters

It is recognized that the amended matters 1 and 3 are ones that add, to claim 1 before amendment, that "optical function layer" "comprises at least one layer" of "a layer comprising a material selected from the group consisting of magnesium oxide, silicon dioxide, magnesium fluoride, calcium fluoride, cerium fluoride, and aluminum fluoride, and having a film thickness of 50 nm or more". Therefore, it is recognized that, by amendment of the amended matters 1 and 3, the above-mentioned limitation related to a material and the above-mentioned numerical value limitation related to a film thickness are added to claims 1 and 5 before amendment about "at least one layer" included in "optical function layer".

On the one hand, from the above-mentioned (1) A, it is recognized that, in the originally attached description etc., there are described an objective of the invention according to the present application to provide a transparent conductive laminated body that is advantageous in making a pattern shape less noticeable and a manufacturing method thereof, and a manufacturing method of a transparent conductive laminated body, comprising: a step of forming an optical function layer over at least one surface of a transparent substrate; a step of forming a transparent conductive film over said optical function layer; a patterning step of forming a conductive pattern area and a nonconductive pattern area in said transparent conductive film; and a step of forming an organic layer on surfaces of said conductive pattern area and said nonconductive pattern area. Also stated is a transparent conductive laminated body, comprising: a transparent substrate; an optical function layer formed on at least one surface of said transparent substrate; a transparent conductive film formed over said optical function layer; a conductive pattern area and a nonconductive pattern area formed on said transparent conductive film; and an organic layer formed on surfaces of said conductive pattern area and said nonconductive pattern area.

In addition, from the above-mentioned (1) B, it is recognized that there is described that: the UV curable resin layers 12 and 12' constituting a part of an optical function layer are formed on the both surfaces of the transparent base material 11 serving as a transparent substrate; the optical function layer 13 constituting the remaining part of the optical function layer is formed on the UV curable resin layer 12; when inorganic compound is used as the above-mentioned optical function layer 13, a refractive index differs due to a material thereof, and, by forming thin films of different refractive indexes with particular film thicknesses, it becomes possible to adjust an optical property; and, as a material for forming the optical function layer 13, magnesium oxide, silicon dioxide, magnesium fluoride, calcium fluoride, cerium fluoride, and aluminum fluoride are cited.

Further, from the above-mentioned (1) C, it is recognized that there is described, in the originally attached description etc., that: PET (125 μm) was used as a transparent substrate; UV curable resin (refractive index n = 1.50) serving as an optical function layer was applied on the both sides of the transparent substrate; TiO_2 (n = 2.23) of 12 nm thickness serving as an optical function layer, SiO_2 (n = 1.46) of 55 nm thickness serving as an optical function layer, and ITO (n = 2.03) of 30 nm thickness serving as a transparent conductive film were formed in this order on the surface of one of the UV curable resin layers by a sputtering method; and, after patterning of the ITO had been performed, UV curable resin (n = 1.50) of 2 μm serving as an organic layer was spin coated, and, by this, a transparent conductive laminated body which had high transmittance and high transparency, and a pattern area of which was not noticeable as an effect of light interference was obtained.

However, according to the above-mentioned (1) C, there is only described, in the originally attached description etc., a working example of a transparent conductive laminated body in which film formation of SiO_2 of 55 nm thickness serving as an optical function layer was made, and, thus, numerical value limitation of making a film thickness of SiO_2 serving as an optical function layer be 50 nm or more is unexplained in the originally attached description etc.

Then, although a transparent conductive laminated body in the example of the above-mentioned (1) C is one that exerts a function effect of high transmittance and high transparency, and realizing not-noticeable pattern areas thanks to an effect of light interference, it is common general knowledge in the relevant technical field that an effect of light interference is caused not only due to the film thickness of SiO_2 serving as optical function layer, but also due to a combination of materials and film thicknesses of a transparent substrate, UV curable resin serving as an optical function layer, TiO_2 serving as an optical function layer, a transparent conductive film, and an organic layer. Therefore, in view of this point, it is not recognized that the numerical value limitation to make a film thickness of SiO_2 serving as an optical function layer be 50 nm or more is a matter that is obvious from the statements of the example of the above-mentioned (1) C.

Besides, in the amended matters 1 and 3, a material forming "at least one layer" included in an "optical function layer" is limited to "a material selected from the group consisting of magnesium oxide, silicon dioxide, magnesium fluoride, calcium fluoride, cerium fluoride, aluminum fluoride", however, according to the above-mentioned (1), it is unexplained in the originally attached description etc. that "at least one layer" included in an "optical function layer" is formed of a material other than silicon dioxide

among the above-mentioned materials, and, in addition, that a film thickness is made to be 50 nm or more.

Furthermore, according to the above-mentioned (1) B, among the above-mentioned materials, silicon dioxide and the other materials have different refractive indexes according to a material, and it is possible to adjust an optical property by forming thin films of different refractive indexes with particular film thicknesses. Therefore, in the light of this point, it is not recognized as an obvious matter to make "at least one layer" included in an "optical function layer" be formed of a material other than silicon dioxide among the above-mentioned materials, and, in addition, make it have a film thickness of 50 nm or more from the statements of the example in the above-mentioned (1) C in which film formation of SiO_2 of 55 nm thickness serving as an optical function layer was performed.

As a consequence, that an "optical function layer" "includes at least one layer" of "a layer comprising a material selected from the group consisting of magnesium oxide, silicon dioxide, magnesium fluoride, calcium fluoride, cerium fluoride, and aluminum fluoride, and having a film thickness of 50 nm or more", which is added to claim 1 and 5 before amendment by the amendment according to the amended matters 1 and 3, is not recognized as being described in the originally attached description etc.

From the above, it must be said that both of the amendments according to the amended matters 1 and 3 are ones that introduce new technical matters in relation to the technical matters derived by summing up all the statements in the originally attached description etc., and, therefore, the amendment according to the amended matters 1 and 3 cannot be recognized as being made within the scope of matters described in the originally attached description etc.

(3) Summary

As mentioned above, because it is not recognized that the amendments according to the amended matters 1 and 3 in the Amendment of the case were made within the scope of matters described in the originally attached description etc., it cannot be said that the Amendment of the case was made within the scope of matters described in the originally attached description etc., and it is recognized as violating the provisions of Article 17-2(3) of the Patent Act.

4 Conclusion

Accordingly, since the Amendment of the case violates the provisions of Patent Act Article 17-2(3), it should be dismissed under the provisions of Article 53(1) of the

Patent Act as applied mutatis mutandis pursuant to the provisions of Article 159(1) of the Patent Act with relevant changes in interpretation.

No. 3 Easily-conceived property of the Invention

1 Regarding the invention of the case

Since the amendments according to the written amendment submitted on Jun. 3, 2014 has been dismissed as described above, the inventions according to claims 1 to 11 of the present application are ones described in the written amendment submitted on Nov. 25, 2013, and the statements of claim 5 in question are shown again as follows.(Hereinafter, the invention according to claim 5 of the present application is referred to as "the Invention")

"[Claim 5]

A transparent conductive laminated body, comprising:

a transparent substrate;

an optical function layer formed on at least one surface of said transparent substrate;

a transparent conductive film formed over said optical function layer;

a conductive pattern area and a nonconductive pattern area formed in said transparent conductive film; and

an organic layer formed on surfaces of said conductive pattern area and said nonconductive pattern area,

wherein said organic layer includes a UV curable resin layer, and

wherein a film thickness of said organic layer is in a μm range from 1 μm or more to 10 μm or less."

2 Cited invention and well-known art

(1) Statements of cited document and cited invention

A In Japanese Unexamined Patent Application Publication No. 2008-243622 (hereinafter, referred to as "Cited Document") that was cited in the reasons for refusal of the examiner's decision and that is a publication distributed before the filing date of the present application in Japan, there are following statements along with drawings.

(A) "[0001]

The present invention relates to a transparent planar body and a transparent touch switch.

[Background Art]

[0002]

Various sorts of configurations of a transparent touch switch for detecting an input position have been considered conventionally, and, as an example, there is known a transparent touch switch of an electrostatic capacity type. For example, a transparent touch switch disclosed in patent document 1 is constituted in a manner that a dielectric layer is sandwiched between a pair of transparent planar bodies provided with transparent conductive films having predetermined pattern shapes, respectively, and, when a finger and the like touches the operation surface, a touch position can be detected using change of electrostatic capacity due to being grounded through a human body.

[0003]

Although this transparent touch panel is used in a way being attached to the surface of such as a liquid crystal display and a CRT, pattern shapes of a transparent conductive film formed on a transparent planar body may stand out, causing decline of visibility.

...

[Disclosure of the Invention]

[Problems to be Solved by the Invention]

[0004]

Therefore, the present invention has an object to provide a transparent planar body and a transparent touch switch that can improve visibility."

(B) "[0011]

FIG. 1 is a schematic constitutional cross sectional view of a transparent touch switch relating to an embodiment of the present invention. This transparent touch switch 101 is a touch switch of an electrostatic capacity type, and includes a first transparent planar body 1 including a patterned transparent conductive film 12 formed on one surface of a transparent substrate 11, and a second transparent planar body 2 including a transparent conductive film 22 formed on one surface of a patterned transparent substrate 21. The first transparent planar body 1 and the second transparent planar body 2 are unified by sticking coating layers 14 and 24 made of a material of adhesion properties that coats respective transparent conductive films 12 and 22 totally to each other.

...

[0014]

Undercoat layers 13 and 23 are arranged in a manner being sandwiched between

the transparent substrates 11 and 21 and the transparent conductive films 12 and 22, respectively, and are constituted of a laminated body including two or more layers having different light refractive indexes. Specifically, the undercoat layers 13 and 23 include laminated bodies of low refractive index layers 13a and 23a, and high refractive index layers 13b and 23b having light refractive indexes higher than those of the low refractive index layers 13a and 23a, respectively, and arrangement is made such that the transparent conductive films 12 and 22 are formed in the side of the low refractive index layers 13a and 23a.

[0015]

As a material constituting each layer of the laminated body of the undercoat layers 13 and 23, silicon-tin oxide (STO), silicon oxide, titanium oxide, tin oxide and the like can be cited, and, as desired combinations, a tin oxide-hafnium oxide system, a silicon oxide-tin oxide system, a zinc oxide-tin oxide system, tin oxide-titanium oxide system and the like can be cited. A combination desired in particular from the point of view of visibility improvement is that the low refractive index layers 13a and 23a are made of silicon oxide (SiOn, n = 1.7 to 2.0), and the high refractive index layers 13b and 23b are made of silicon-tin oxide. The undercoat layers 13 and 23 can be formed by a sputtering method, a resistance deposition method, an electron beam vapor deposition method and the like.

[0016]

It is preferred that the thicknesses of the low refractive index layers 13a and 23a are 100 nm or less, and the thicknesses of the high refractive index layers 13b and 23b are 100 nm or less.

[0017]

As a material of the transparent conductive films 12 and 22, indium tin oxide (ITO), zinc oxide, indium oxide, antimony added tin oxide, fluorine added tin oxide, aluminum added zinc oxide, potassium added zinc oxide, silicon added zinc oxide, and metal oxide such as a zinc oxide-tin oxide system, an indium oxide-tin oxide system, and a zinc oxide-indium oxide-magnesium oxide system can be cited, and it may be formed of a combination of two kinds or more of these.

...

[0021]

As shown in FIG. 2 and FIG. 3, the transparent conductive films 12 and 22, are respectively formed as aggregations of a plurality of strip-shaped conductive portions 12a and 22a extending in parallel, and the strip-shaped conductive portions 12a and 22a of the transparent conductive films 12 and 22 are arranged in a manner being orthogonal

to each other.

...

[0022]

Patterning of the transparent conductive films 12 and 22 can be performed by forming a mask portion having a desired pattern shape on a surface of the transparent conductive films 12 and 22 respectively formed on the transparent substrates 11 and 21 via the undercoat layers 13 and 23, and, after etching and removing exposed portions by acid solution and the like, making the mask portion be dissolved by alkaline fluid and the like. The method to perform patterning of the transparent conductive films 12 and 22 by etching in this way can remove unnecessary transparent conductive films 12 and 22, and, on the other hand, can make the undercoat layers 13 and 23 totally remain. In this regard, however a patterning method is not limited to this, and it may be performed by another publicly known method.

...

[0024]

The coating layers 14 and 24 are formed of adhesive materials covering the surfaces of the transparent conductive films 12 and 22 and the undercoat layers 13 and 23, and a common transparent adhesive agent such as an epoxy system and an acrylic system can be used, and it may be one including a core material made of a transparency film including norbornene system resin. The thicknesses of the coating layers 14 and 24 are usually around 10 to 100 μm. Meanwhile, instead of forming the coating layers 14 and 24 by an adhesive material, they can be formed also by a non-adhesive material such as acrylic system resin, for example. When forming the coating layers 14 and 24 by such non-adhesive material, unification of the first transparent planar body 1 and the second transparent planar body 2 can be performed by additionally making an adhesive material interpose between the coating layer 14 and the coating layer 24."

(C) "[0025]

Here, as shown in the schematic constitutional cross sectional view of the transparent planar body 1 of FIG. 6, about each absolute value of differences between: each first luminous reflectance for each wavelength obtained by multiplying each first spectral reflectance that is a reflectance for each wavelength in reflection light L1 of light irradiated from the side of other surface 11a of the transparent substrate 11 (the side opposite the surface on which the transparent conductive film 12 is formed) to an area in which the transparent conductive film 12 is formed by each standard relative luminous efficiency that is set for each wavelength of light and that is discussed below; and each second luminous reflectance for each wavelength obtained by multiplying

each second spectral reflectance that is a reflectance for each wavelength in reflection light L2 of light irradiated from the other surface 11a of the transparent substrate 11 to an area in which the transparent conductive film 12 is not formed by aforementioned each standard relative luminous efficiency that is set for each wavelength of light, it is preferred that their integrated value (Esum) in the wavelength range of 380 nm to 780 nm that is a visible-range wavelength of light be 18.0 or less. Furthermore, in addition to Esum being 18.0 or less, it is preferred that a maximum value (Emax) in wavelength range of 380 nm to 780 nm about aforementioned each absolute value of differences between each first luminous reflectance and each second luminous reflectance that are obtained for each wavelength of reflection light be 0.3 or less. It is more preferred that Esum be 16.0 or less, and Emax be 0.25 or less.

[0026]

By selecting a material and a thickness and the like of the transparent substrate 11, the transparent conductive film 12, the undercoat layer 13, and the coating layer 14 so that values of Esum and Emax may be in the above described numerical value range, a pattern shape of the transparent conductive film 12 can be made to be less noticeable to improve visibility in the transparent planar body 1. The same applies to transparent planar body 2."

B Cited Invention

(A) Because, according to the above-mentioned A(B) (paragraphs [0021] and [0022], and FIG. 2), by patterning of the transparent conductive film 12, unnecessary transparent conductive film 12 is removed and a plurality of pieces of strip-shaped conductive portion 12a extending in parallel are formed, it is obvious that areas from which the transparent conductive film 12 have been removed exist between pieces of strip-shaped conductive portion 12a.

Then, from the above-mentioned A(B) (paragraph [0024] and FIG. 1), it is recognized that the coating layer 14 covering the surface of the transparent conductive film 12 is formed on a surface of areas from which the above-mentioned strip-shaped conductive portion 12a and the transparent conductive film 12 have been removed.

(B) From the above-mentioned A and the above-mentioned (A), it is recognized that there is described the following invention (hereinafter, referred to as "Cited Invention") in the Cited Document.

"A transparent planar body 1, comprising:

a transparent substrate 11;

an undercoat layer 13 formed on one surface of the transparent substrate 11 and including a laminated body of two or more layers having light refractive indexes

different from each other;

a transparent conductive film 12 formed on the undercoat layer 13;

a strip-shaped conductive portion 12a formed by patterning of the transparent conductive film 12 and an area from which the transparent conductive film 12 has been removed; and

a coating layer 14 made of a transparent adhesive agent such as an epoxy system and an acrylic system formed on a surface of the area from which the strip-shaped conductive portion 12a and the transparent conductive film 12 have been removed."

(2) Statements of well-known example and well-known art

A Well-known example 1

In International Publication No. WO 2005/024853 (hereinafter referred to as "Well-Known Example 1") that was cited in the reasons for refusal of the examiner's decision and that is a publication distributed in Japan and abroad prior to the filing date of the present application, there are following statements along with drawings.

"[0039]

1. Transparent conductive laminated body

In the first embodiment, a transparent conductive laminated body of the present invention includes: a flat and smooth substrate; a transparent conductive anode electrode layer formed on the flat and smooth substrate by an application method and including conductive fine particles as a main component; a transparent base material joined to the transparent conductive anode electrode layer by an adhesive agent layer, wherein it is made possible to peel the flat and smooth substrate away from the transparent conductive anode electrode layer.

...

[0043]

A transparent conductive laminated body of the present invention that can be obtained in this way has a basic structure as shown in FIG. 1. In other words, the laminated body includes: a flat and smooth substrate 1 used as a temporary substrate for film forming a transparent conductive anode electrode layer 2; the transparent conductive anode electrode layer 2 formed on the flat and smooth substrate 1 by an application method; and a transparent base material 4 joined to the transparent conductive anode electrode layer 2 by an adhesive agent layer 3, and it is made such that this flat and smooth substrate 1 can be peeled away from the transparent conductive anode electrode layer 2.

...

[0045]

On the other hand, the transparent base material may be one as used in organic EL devices conventionally, and a film or plate of plastic, through which visible light ray penetrates, such as polyethylene terephthalate (PET), polyethylene naphthalate (PEN), polyether sulfone (PES), or a glass plate and the like can be used, for example....

...

[0047]

As an adhesive agent, although various kinds of room temperature hardening resin, thermosetting resin, ultraviolet light hardening resin, electron beam hardening resin and the like of such as an acrylic system, a urethane system, an epoxy system can be used, the adhesive agent is not limited to these if it is one that can, at least on the occasion of being broken away from a flat and smooth substrate, keep a transparent conductive anode electrode layer or a transparent coat layer stuck on a transparent base material, and, in addition, it does not exert a negative effect on a peeling property of a flat and smooth substrate."

B Well-known example 2

In Japanese Unexamined Patent Application Publication No. 2001-110238 (hereinafter, referred to as "Well-Known Example 2") that is a publication distributed before the filing date of the present application in Japan, there are following statements as well as drawings.

* "[Claims]

[Claim 1] A low reflection transparent conductive laminate film, comprising: a hard coating layer on a transparent base material; a transparent conductive layer including a fine particle made of at least one kind of metal; and at least one conductive-layer protecting layer (note by the body: it is recognized as the error of "protecting layer for a conductive layer") having an antifouling property, the conductive-layer protecting layer being formed in an outer layer of the transparent conductive layer and having a refractive index different from a refractive index of the transparent conductive layer."

* "[0015] It is preferred that a base material used in the present invention be a plastic film of a film shape, and be a film of such as: polyester such as polyethylene terephthalate, polyethylene naphthalate, and copolymer or mixture and the like of polyethylene terephthalate and polyethylene naphthalate; polycarbonate; norbornene system resin (cyclic olefin copolymer); cellulose resin such as triacetylcellulose, diacetylcellulose and the like; polyarylate; and polymethacrylic acid methyl ester and the like. ...

...

[0022] A conductive layer of the present invention is a layer that contains at least one kind of conductive metal or conductive metal oxide, and resistance of its conductive layer is 10 KΩ/□ (applied voltage: 90V) or less, preferably 10-1000 Ω/□, and more preferably 10 Ω-700 Ω/□. ...A conductive metal fine particle is gold, silver, copper, aluminum, iron, nickel, palladium, platinum, or alloys of these and the like. As a conductive metal oxide fine particle, indium oxide, tin oxide, antimony oxide, zinc oxide, aluminum oxide, silicon oxide, iron oxide, or complex oxides of these are cited. ...

...

[0027] Next, a protecting layer for a conductive layer of the present invention will be described in detail. ...

[0028] As resin that is used preferably among those, fluorine gum, phenol resin, urea resin, melamine resin, nylon 6, nylon 66, polymethacrylic acid methyl, polyvinyl chloride, polyvinyl chlorideidene, polyvinylidene fluoride, polyvinyl formal, (mono-, di-, tri-) acetyl cellulose, nitro cellulose, and, further, active energy ray (ultraviolet light, electron ray, gamma ray and the like) hardening resin and the like can be listed. ..."

C Well-known art

From the above-mentioned A and B, it is recognized that it is a well-known technique prior to the present application in the relevant technical field to use, in a transparent conductive laminated body having a transparent conductive body layer formed on a transparent substrate, adhesive agent of UV curable resin for adhesive bonding and protection of the transparent conductive body layer, as is observed in well-known examples 1 and 2.

3 Comparison of the Invention and Cited Invention

(1) It can be said that "a transparent substrate 11", "on one surface of the transparent substrate 11", "an undercoat layer 13 including a laminated body of two or more layers having light refractive indexes different from each other", "a transparent conductive film 12", "formed by patterning of the transparent conductive film 12", "a strip-shaped conductive portion 12a", and "an area from which the transparent conductive film 12 has been removed" in the Cited Invention correspond to "a transparent substrate", "at least one surface of said transparent substrate", "an optical function layer", "a transparent conductive film", "formed on said transparent conductive film", "a conductive pattern area", and "a nonconductive pattern area" of the Invention, respectively.

It can be said that "an organic layer formed on surfaces of said conductive

pattern area and said nonconductive pattern area" of the Invention and "a coating layer 14 made of a transparent adhesive agent such as an epoxy system and an acrylic system formed on a surface of the area from which the strip-shaped conductive portion 12a and the transparent conductive film 12 have been remove" in the Cited Invention are in common in a point of "an organic layer formed on surfaces of said conductive pattern area and said nonconductive pattern area" with the exception of the constitution relating to the different feature of the Invention pertinent to "organic layer", which is discussed below.

It can be said that "a transparent planar body 1" in the Cited Invention corresponds to "a transparent conductive laminated body" of the Invention.

(2) According to the above, it is recognized that corresponding features and different features between the Invention and the Cited Invention are as follows.

A Corresponding feature

"A transparent conductive laminated body, comprising:

a transparent substrate;

an optical function layer formed on at least one surface of said transparent substrate;

a transparent conductive film formed over said optical function layer;

a conductive pattern area and a nonconductive pattern area formed on said transparent conductive film; and

an organic layer formed on surfaces of said conductive pattern area and said nonconductive pattern area."

B Different feature

A point that, in the Invention, "an organic layer" "is made of a UV curable resin layer" and "the film thickness is in a μm range from 1 μm or more to 10 μm or less", whereas the Cited Invention does not include the above constitution.

4 Examination as to the different feature

From the above-mentioned 2(2)B, it is recognized that it is a well-known technology in the relevant technical field prior to the present application to use, in a transparent conductive laminated body configured by forming a transparent conductive body layer on a transparent substrate, an adhesive agent of UV curable resin for adhesive bonding and protection of the transparent conductive body layer. Therefore, it is recognized that it could have been easily conceived by a person skilled in the art to use, in the Cited Invention, an adhesive agent of UV curable resin such as an epoxy

system and an acrylic system as a transparent adhesive agent constituting the coating layer 14 based on the above-mentioned well-known art.

In addition, according to the above-mentioned 2(1)A(C), there is described, in the Cited Document, that, by selecting a material and thickness and the like of the coating layer 14, the pattern shapes of the transparent conductive film 12 can be made to be less noticeable and visibility can be improved in the transparent planar body 1. Therefore, it can be said that it could be naturally conducted by one of ordinary skilled in the art to, in the Cited Invention, when forming the above-mentioned coating layer 14 using an adhesive agent of UV curable resin, set a film thickness of the coating layer 14 so that pattern shapes of the transparent conductive film 12 may be less noticeable to improve visibility.

Then, according to the above-mentioned 2(1)A(B), although, in the Cited Document, there is described that the film thickness of the coating layer 14 is made to be "about 10 to 100 μm usually", it is recognized as a matter that can be normally performed by one of ordinary skilled in the art to make, in the Cited Invention, when forming the coating layer 14 using an adhesive agent of UV curable resin, its film thickness be in a μm range from 1 μm or more to 10 μm or less in order to make pattern shapes of the transparent conductive film 12 less noticeable to enable visibility improvement on the occasion of adjusting a film thickness.

As a consequence, it is recognized that it could have been easily conceived by one of ordinary skilled in the art to make, in the Cited Invention, it be of the constitution relating to the different feature based on the above-mentioned well-known art.

5 Working-effect exerted by the Invention

From the above-mentioned No. 2 3(1)A, it is recognized that the Invention is an invention that has an object to provide a transparent conductive laminated body and a manufacturing method thereof that are advantageous in making pattern shapes less noticeable, and that achieves this, whereas, according to the above-mentioned 2(1)A(A), the Cited Invention is an invention that has an object to provide a transparent planar body and a transparent touch switch capable of improving visibility, and that achieves this in view of a problem in the related art that pattern shapes of a transparent conductive film formed on a transparent planar body stands out, causing decline of visibility.

As a consequence, it is not recognized that there is a particular difference between the Invention and the Cited Invention in the point of a working-effect.

From the above, it cannot be said that the working-effect exerted by the

Invention is a particular one.

6 Summary

As mentioned above, because the different feature between the Invention and the Cited Invention could have easily conceived, in the Cited Invention, by one of ordinary skilled in the art based on the well-known art as observed in the well-known examples 1 and 2, the invention according to claim 5 of the present application (the Invention) could have been invented easily by one of ordinary skilled in the art based on the invention described in the Cited Document (Cited Invention) and well-known technologies as observed in the well-known examples 1 and 2, and, therefore, the appellant should not be granted a patent for this under the provisions of Article 29(2) of the Patent Act.

No. 4 Wrap-up

As has been examined above, the appellant should not be granted a patent for the invention according to claim 5 of the present application under the provisions of Article 29(2) of the Patent Act, and, therefore, the present application should be rejected without examining other claims.

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

May 11, 2015

Chief administrative judge:	SUZUKI, Tadaaki
Administrative judge:	KAWAGUCHI, Masahide
Administrative judge:	KATO, Koichi