# Appeal decision

Appeal No. 2014- 21731

Osaka, Japan
Appellant NITTO DENKO CORPORATION

Osaka, Japan
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The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2013-56412 "METHOD OF PRODUCING POLARIZING PLATE" [application published on December 11, 2014, Japanese Unexamined Patent Application Publication No. 2014-232126] has resulted in the following trial decision.

Conclusion

The demand for trial of the case was groundless.

Reason

No. 1 Outline of the case

1 History of the procedures

The application is a patent application dated March 19, 2013, and the outline of history of the procedure is as follows.

| | |
|---|---|
| January 7, 2014: | Notice of reasons for refusal (dispatched on January 15, 2014) |
| March 4, 2014: | Written opinion |
| March 4, 2014: | Written amendment |
| April 25, 2014: | Notice of reasons for refusal (final, dispatched on May 7, 2014) |
| June 11, 2014: | Written opinion |
| August 1, 2014: | Examiner's decision of refusal (delivered on August 6, 2014) |
| October 27, 2014: | Written amendment |
| October 27, 2014: | Request for appeal |
| December 26, 2014: | Reconsideration report |
| November 18, 2015: | Notice of reasons for refusal (dispatched on November 25, |

2015)

January 19, 2016: Written opinion (hereinafter, referred to as "the Written Opinion")

January 19, 2016: Written amendment

2 The Invention

An invention according to Claim 1 of the scope of claims of the application (hereinafter, referred to as "the Invention") is as follows.

"A method of producing a polarizing plate, comprising:

a step of producing a polarizing film on the resin substrate by stretching and dyeing a laminate including a resin substrate and a polyvinyl alcohol-based resin layer formed on one side of the resin substrate;

a step of laminating a first protective film on the opposite side of the polarizing film from the resin substrate, followed by heating;

a step of peeling the resin substrate;

a step of laminating a second protective film on a side from which the resin substrate of the polarizing film has been peeled;

a step of laminating the first protective film through a water-based adhesive; and

a step of laminating the second protective film through an adhesive having moisture content of 10% or less, wherein

the first protective film has moisture permeability of 100 $g/m^2 \bullet 24h$ or less.

3 Reasons for refusal

Since the reasons for refusal of the notice of reasons for refusal dated on November 18, 2015 are that the invention according to Claim 1 of the application is such that a person skilled in the art could have easily invented it on the basis of the inventions and such described in the Cited Document distributed in Japan or abroad before the application, the Appellant should not be granted a patent under the provisions of Article 29(2) of the Patent Act.

Cited Document: Japanese Unexamined Patent Application Publication No. 2012-256018

Known Example 1: Japanese Unexamined Patent Application Publication No. 2013-11774

Known Example 2: Japanese Unexamined Patent Application Publication No. 2012-181279

Known Example 3: Japanese Unexamined Patent Application Publication No. 2012-53078

No. 2 Judgment of the collegial body

1 Description of the Cited Document and the Cited Invention

(1) Description of the Cited Document

In the Cited Document, the following matters are described (underlining is added by the collegial body, the same shall apply hereinafter).

A "[Claim 1]

A method of producing a polarizing film, comprising:

forming a polyvinyl alcohol-based resin layer on a thermoplastic resin substrate to produce a laminate;

dyeing the polyvinyl alcohol-based resin layer of the laminate with iodine;

stretching the laminate; and

covering, after the dyeing and the stretching, a surface of the polyvinyl alcohol-based resin layer of the laminate with a cover film having a moisture permeability of 100 g/m$^2$•24h or less, followed by heating of the laminate under the state.

[Claim 2]

A method of producing a polarizing film according to claim 1, wherein the heating is performed at a temperature of 60°C or more.

[Claim 3]

A method of producing a polarizing film according to claim 1 or 2, wherein the surface of the polyvinyl alcohol-based resin layer is covered with the cover film through an adhesive.

[Claim 4] A method of producing a polarizing film according to claim 3, wherein the adhesive comprises an aqueous adhesive."

B "[The detailed description of the invention]

[TECHNICAL FIELD]

[0001]

The present invention relates to a method of producing a polarizing film.

[BACKGROUND ART]

[0002]

A polarizing film is placed on each of both sides of the liquid crystal cell of a liquid crystal display apparatus as a representative image display apparatus, the

placement being attributable to the image-forming mode of the apparatus. For example, the following method has been proposed as a method of producing the polarizing film (for example, Patent Document 1). A laminate having a thermoplastic resin substrate and a polyvinyl alcohol (PVA)-based resin layer is stretched, and is then immersed in a dyeing liquid so that the polarizing film may be obtained. According to such method, a polarizing film having a small thickness is obtained. Accordingly, the method has been attracting attention because of its potential to contribute to the thinning of a recent liquid crystal display apparatus. However, such method involves a problem in that the optical characteristics of the polarizing film to be obtained are insufficient.

[CITATION LIST]

[Patent Literature]

[0003]

[Patent Document 1] Japanese Unexamined Patent Application Publication No.2001-343521"

C "[SUMMARY OF INVENTION]

[Technical Problem]

[0004]

The present invention has been made to solve the conventional problem, and a main object of the present invention is to provide a method of producing a polarizing film having excellent optical characteristics."

D "[Mode for Carrying Out the Invention]

[0008]

Hereinafter, preferred embodiments of the present invention are described. However, the present invention is not limited to these embodiments.

A. Production Method

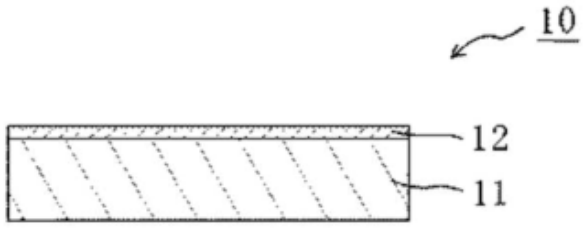
A method of producing a polarizing film of the present invention includes: forming a PVA-based resin layer on a thermoplastic resin substrate to produce a laminate (step A); dyeing the PVA-based resin layer of the laminate with iodine (step B); stretching the laminate (step C); and covering the surface of the PVA-based resin layer of the laminate with a cover film, followed by heating of the laminate under the state. Hereinafter, the respective steps are described."

E "[0009]

A-1. Step A

FIG. 1 is a schematic sectional view of a laminate according to a preferred embodiment of the present invention.

[FIG. 1]




A laminate 10 has a thermoplastic resin substrate 11 and a PVA-based resin layer 12, and is produced by forming the PVA-based resin layer 12 on the thermoplastic resin substrate 11. Any appropriate method can be adopted as a method of forming the PVA-based resin layer 12. The PVA-based resin layer 12 is preferably formed by applying an application liquid containing a PVA-based resin onto the thermoplastic resin substrate 11 and drying the liquid."

F "[0022]

A-2. Step B

In the step B, the PVA-based resin layer is dyed with iodine. Specifically, the dyeing is performed by causing the PVA-based resin layer to adsorb iodine. A method for the adsorption is, for example, a method involving immersing the PVA-based resin layer (laminate) in a dyeing liquid containing iodine, a method involving applying the dyeing liquid to the PVA-based resin layer, or a method involving spraying the dyeing liquid on the PVA-based resin layer. Of those, the method involving immersing the laminate in the dyeing liquid is preferred. This is because iodine can favorably adsorb to the layer."

G "[0024]

The step B may be performed before the step C to be described later, or may be performed after the step C. As described later, when the underwater stretching mode is adopted in the step C, the step B is preferably performed before the step C."

H "[0025]

A-3. Step C

In the step C, the laminate is stretched. Any appropriate method can be adopted as a method of stretching the laminate. Specifically, fixed-end stretching may be adopted, or free-end stretching (such as a method involving passing the laminate between rolls having different peripheral speeds to uniaxially stretch the laminate) may be adopted. The stretching of the laminate may be performed in one stage, or may be performed in a plurality of stages. When the stretching is performed in a plurality of stages, the stretching ratio (maximum stretching ratio) of the laminate to be described later is the product of stretching ratios in the respective stages."

I "[0034]

A-4. Step D

After the step B and the step C, in the step D, the surface of the PVA-based resin layer of the laminate is covered with a cover film, and then the laminate is heated under the state. Subjecting the PVA-based resin layer of the laminate to such treatment can improve the optical characteristics of the polarizing film to be obtained. One possible factor for the improvements of the optical characteristics is that an iodine complex having low orientation property which contributes to the optical characteristics to a small extent can be selectively decomposed by the step D. Specifically, the thermoplastic resin substrate side (lower side) and the surface side (upper side) of the PVA-based resin layer that has been formed on the thermoplastic resin substrate and has undergone the dyeing step and the stretching step are different from each other in construction. Specifically, the lower side and the upper side are different from each other in orientation property of the PVA-based resin, and the orientation property of the upper side tends to be lower than that of the lower side. The orientation property of the iodine complex present in the portion having the lower orientation property is also low. Accordingly, the complex not only contributes to the optical characteristics (particularly the polarization degree) to a small extent but also can be responsible for the reductions of the optical characteristics (particularly the transmittance). On the other hand, such an iodine complex has a weak bonding strength because of its low orientation property, and is hence easily decomposed. As a result, the iodine complex having low orientation property is selectively decomposed by the step D so that absorption in a visible light region may be reduced. Thus, the transmittance can be increased. It should be noted that as the iodine complex having low orientation property originally contributes to the polarization degree to a small extent, the reduction of the polarization degree is minimized even

when the complex is decomposed.

[0035]

Any appropriate resin film can be adopted as the cover film. Its moisture permeability is preferably 100 g/m$^2$•24h or less, more preferably 90 g/m$^2$•24h or less. Such cover film enables the performance of the heating treatment in a state where moisture present in the PVA-based resin layer is held in the layer. When the heating is performed in the presence of moisture, the iodine complex (having low orientation property) that has been made water-soluble is particularly easily decomposed and can be decomposed into an iodine ion. As a result, the absorption in the visible light region of the polarizing film to be obtained reduces and hence the transmittance can increase. Here, the moisture permeability of the thermoplastic resin substrate is preferably as low as possible, because a larger amount of moisture present in the PVA-based resin layer can be held. The moisture permeability of the thermoplastic resin substrate after the stretching step (step C) is preferably 100 g/m$^2$•24h or less, more preferably 90 g/m$^2$•24h or less. It should be noted that the term "moisture permeability" refers to a value determined by measuring the amount (g) of water vapor, which passes a sample having an area of 1 m$^2$ within 24 hours in an atmosphere having a temperature of 40°C, and a humidity of 92% RH, in conformity with the moisture permeability test (cup method) of JIS Z0208.

[0036]

Any appropriate material capable of satisfying the moisture permeability can be adopted as a constituent material for the cover film. Examples of the constituent material for the cover film include cycloolefin-based resins such as a norbornene-based resin, olefin-based resins such as a polyethylene and a polypropylene, polyester-based resins, and (meth)acrylic resins. It should be noted that the term "(meth) acrylic resins" refers to acrylic resins and/or methacrylic resins.

[0037]

The thickness of the cover film can be set to a thickness capable of satisfying the moisture permeability. The thickness is representatively 10 μm to 100 μm.

[0038]

In a preferred embodiment, the surface of the PVA-based resin layer is covered with the cover film through an adhesive. The use of the adhesive prevents the occurrence of a gap between the PVA-based resin layer and the cover film, and hence can improve adhesiveness between them. As a result, the iodine complex having low orientation property can be efficiently decomposed. Any appropriate adhesive is used as the adhesive, and the adhesive may be an aqueous adhesive, or may be a

solvent-based adhesive. Of those, the aqueous adhesive is preferably used. Moisture in the aqueous adhesive can migrate to the PVA-based resin layer. Thus, the stability of the iodine complex reduces. In particular, the iodine complex having low orientation property is brought into such a state as to be easily decomposed, because its original stability is low. As a result, the decomposition of the iodine complex having low orientation property can be selectively promoted."

J "[0042]

Specifically, the adhesive is applied to the surface of the PVA-based resin layer before the cover film is attached. The thickness of the adhesive at the time of the application can be set to any appropriate value. For example, the thickness is set so that an adhesive layer having a desired thickness may be obtained after heating (drying). The thickness of the adhesive layer is preferably 10 nm to 300 nm, more preferably 10 nm to 200 nm, particularly preferably 20 nm to 150 nm. Upon attachment of the cover film, moisture content per unit area in the adhesive is preferably 0.05 $mg/cm^2$ or more. When such moisture content is satisfied, the iodine complex having low orientation property can be efficiently decomposed. Meanwhile, the moisture content is preferably 2.0 $mg/cm^2$ or less, more preferably 1.0 $mg/cm^2$ or less. This is because it may take a long time to dry the adhesive. A preferred procedure is as described below. The laminate is dried before the step D. After the drying, the adhesive is applied to the surface of the PVA-based resin layer before the cover film is attached. Then, the PVA-based resin layer is heated in a state where the adhesive contains water. The moisture content per unit area in the adhesive is as described above, and the moisture content is determined from the moisture content in the adhesive and the amount of the adhesive applied to the surface of the PVA-based resin layer."

K "[0045]

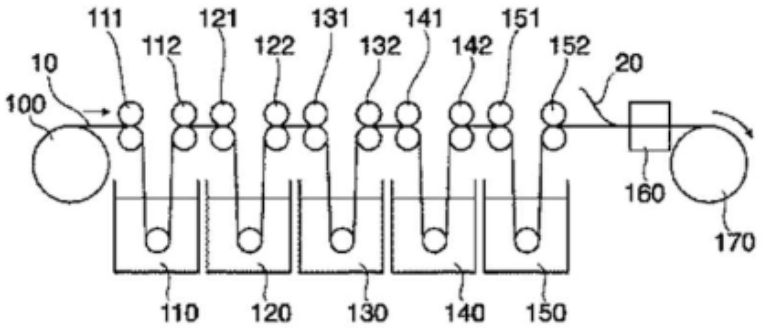
A-5. Any Other Step

The method of producing a polarizing film of the present invention can include any other step in addition to the step A, the step B, the step C, and the step D. Examples of the other step include an in solubilizing step, a cross-linking step, a stretching step different from the step C, a washing step, and a drying step. The other step can be performed at any appropriate timing."

L "[0055]

FIG. 2 is a schematic view illustrating an example of the method of producing a polarizing film of the present invention.

[FIG. 2]




The laminate 10 is fed from a feeding portion 100, and is then immersed in a bath 110 of an aqueous solution of boric acid by rolls 111 and 112 (the insolubilizing step). After that, the laminate is immersed in a bath 120 of an aqueous solution of a dichromatic substance (iodine) and potassium iodide by rolls 121 and 122 (the step B). Next, the laminate is immersed in a bath 130 of an aqueous solution of boric acid and potassium iodide by rolls 131 and 132 (the cross-linking step). After that, the laminate 10 is stretched through the application of a tension in its longitudinal direction (lengthwise direction) with rolls 141 and 142 having different speed ratios while being immersed in a bath 140 of an aqueous solution of boric acid (the step C). The laminate (optical film laminate) 10 subjected to the stretching treatment is immersed in a bath 150 of an aqueous solution of potassium iodide by rolls 151 and 152 (the washing step), and is then subjected to the drying step (not shown). After that, the surface of the PVA-based resin layer is covered with a cover film 20. The resultant is heated in a thermostatic zone 160 held at a predetermined temperature (the step D) and then wound by a winding portion 170."

M "[0056]

B. Polarizing Film

The polarizing film of the present invention is obtained by the above-described production method. The polarizing film of the present invention is substantially a PVA-based resin film that adsorbs and orients a dichromatic substance. The thickness of the polarizing film is representatively 25 μm or less, preferably 15 μm or less, more preferably 10 μm or less, still more preferably 7 μm or less, particularly preferably 5 μm or less. Meanwhile, the thickness of the polarizing film is

preferably 0.5 μm or more, more preferably 1.5 μm or more. The polarizing film preferably shows absorption dichroism at any wavelength in the wavelength range of 380 nm to 780 nm. The single axis transmittance of the polarizing film is preferably 40.0% or more, more preferably 41.0% or more, still more preferably 42.0% or more, particularly preferably 43.0% or more. The polarization degree of the polarizing film is preferably 99.8% or more, more preferably 99.9% or more, still more preferably 99.95% or more."

N "[0057]

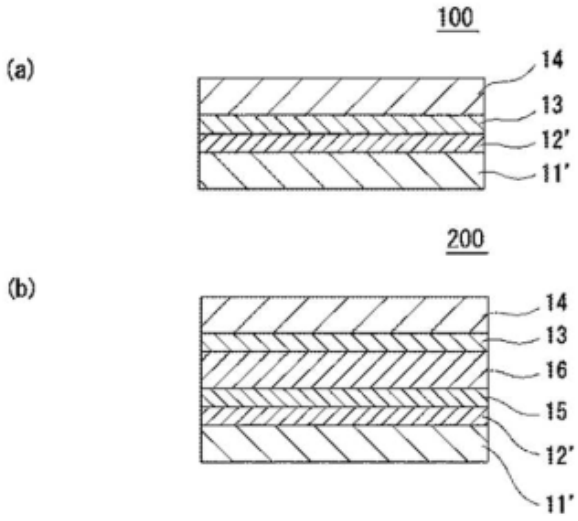
Any appropriate method can be adopted as a usage of the polarizing film. Specifically, the polarizing film may be used in a state of being integrated with the thermoplastic resin substrate and/or the cover film, or may be used after the release of the thermoplastic resin substrate and/or the cover film. When the cover film is not released, the cover film can be used as an optical function film to be described later.

[0058]

C. Optical Laminate

An optical laminate of the present invention has the polarizing film. FIGS. 3(a) and 3(b) are each a schematic sectional view of an optical film laminate according to a preferred embodiment of the present invention.

[FIG. 3] (a) and (b)



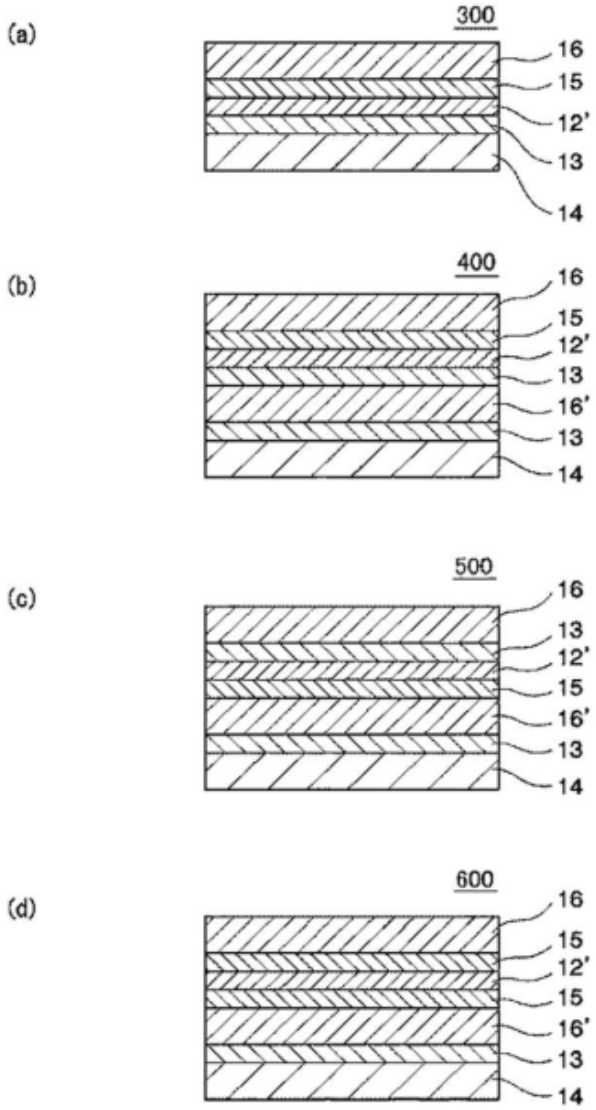

An optical film laminate 100 has a thermoplastic resin substrate 11', a polarizing film 12', a pressure-sensitive adhesive layer 13, and a separator 14, in the stated order. An optical film laminate 200 has the thermoplastic resin substrate 11', the polarizing film 12', an adhesive layer 15, an optical function film 16, the pressure-sensitive

adhesive layer 13, and the separator 14, in the stated order. In this embodiment, the thermoplastic resin substrate is directly used as an optical member without being released from the resultant polarizing film 12'. The thermoplastic resin substrate 11' can function as, for example, a protective film for the polarizing film 12'.

[0059]

FIGS. 4(a), 4(b), 4(c), and 4(d) are each a schematic sectional view of an optical function film laminate according to another preferred embodiment of the present invention.

[FIG. 4] (a) to (d)




An optical function film laminate 300 has the separator 14, the pressure-sensitive adhesive layer 13, the polarizing film 12', the adhesive layer 15, and the optical

function film 16, in the stated order. An optical function film laminate 400 has, in addition to the construction of the optical function film laminate 300, a second optical function film 16' provided between the polarizing film 12' and the separator 14 through the pressure-sensitive adhesive layer 13. An optical function film laminate 500 is such that the optical function film 16 is laminated on the polarizing film 12' through the pressure-sensitive adhesive layer 13, and the second optical function film 16' is laminated on the polarizing film 12' through the adhesive layer 15. An optical function film laminate 600 is such that the optical function film 16 and the second optical function film 16' are each laminated on the polarizing film 12' through the adhesive layer 15. In this embodiment, the above-described thermoplastic resin substrate has been removed.

[0060]

The lamination of the respective layers constituting the optical laminate of the present invention is not limited to the illustrated examples, and any appropriate pressure-sensitive adhesive layer or adhesive layer is used. The pressure-sensitive adhesive layer is representatively formed of an acrylic pressure-sensitive adhesive. The adhesive layer is representatively formed of a PVA-based adhesive. The above-described optical function film can function as, for example, a protective film for a polarizing film or a retardation film, or the like."

(2) The Cited Invention

A method of producing a polarizing film including steps A to D is disclosed in paragraphs [0008] to [0056] of the Cited Document as embodiments corresponding to Claim 1, Claim 3, and Claim 4 of the Cited Document. While, in paragraphs [0057] to [0060] of the Cited Document, an optical film laminate is disclosed as a usage of the polarizing film, an optical film laminate of FIG. 4 (d) is disclosed as one example thereof.

In the Cited Document, the following usages of polarizing films are disclosed (Hereinafter, referred to as "the Cited Invention". To manifest cited parts, paragraph numbers are also described.).

"[0009] step A: The laminate includes a thermoplastic resin substrate and a PVA-based resin layer, is produced by forming the PVA-based resin layer on the thermoplastic resin substrate,

[0022] step B: dying the PVA-based resin layer with iodine,

[0025] step C: stretching the laminate,

[0034] step D: covering a PVA-based resin layer surface of the laminate with a

cover film, followed by heating the laminate in the state,

[0008] in a method of producing a polarizing film,

[0035] the moisture permeability of the cover film is 100 g/$m^2$•24h or less,

[0038] the surface of the PVA-based resin layer is covered with the cover film through an adhesive; a water-based adhesive is preferably used for the adhesive,

[0057] any appropriate method can be adopted for a usage of the above-described polarizing film, the thermoplastic resin substrate and/or the cover film may be peeled for use; when the cover film is not peeled, the cover film can be used as an optical function film,

[0059] the optical function film laminate 600 is such that the optical function film 16 and the second optical function film 16' are each laminated on the polarizing film 12' through the adhesive layer 15, [0060] the adhesive layer is representatively formed of the PVA-based adhesive,

[0059] the thermoplastic resin substrate is removed, a usage of the polarizing film,"

2 Comparison and judgment

(1) Comparison

A A step of producing a polarizing film on a resin substrate

The Cited Invention includes steps as steps A to D, "step A: the laminate includes a thermoplastic resin substrate and a PVA-based resin layer, is produced by forming the PVA-based resin layer on the thermoplastic resin substrate, step B: dying the PVA-based resin layer with iodine, step C: stretching the laminate, step D: covering a PVA-based resin layer surface of the laminate with a cover film, and, in the state, heating the laminate".

Although, in the Cited Invention, the steps A to D as a whole correspond to "a method of producing a polarizing film", when viewed technically, a polarizing film is produced on the thermoplastic resin substrate with steps up to step C. "A thermoplastic resin substrate", "on the thermoplastic resin substrate", "a PVA-based resin layer", "a laminate", "stretching", and "dyeing" of the Cited Invention correspond to "a resin substrate", "on one side of the resin substrate", "a polyvinyl alcohol-based resin layer", "a laminate", "stretching", and "dyeing" of the Invention, respectively.

Therefore, the steps A to C of the Cited Invention correspond to "a step of producing a polarizing film on the resin substrate" of the Invention, and the steps A to C of the Cited Invention satisfy the requirements of "a step of producing a polarizing

film on the resin substrate by stretching and dying a laminate including a resin substrate and a polyvinyl alcohol-based resin layer formed on one side of the resin substrate" of the Invention.

A construction of "stretching and dyeing" of the Invention is not a construction specifying an order of processes of "stretching" and "dyeing". For example, paragraph [0041] of the detailed description of the invention of the application has a description reading: "A dyeing treatment can be performed at any appropriate timing. When performing the above-described underwater stretching, the dyeing treatment is preferably performed before the underwater stretching". Even if it is assumed that the construction of "stretching and dyeing" of the Invention is limitedly interpreted as a construction of "dyeing after stretching" to make it a different feature from the Cited Invention, since it is described in paragraph [0024] of the Cited Document that "Step B may be performed before step C described later or may be performed after step C", the different feature is just a matter of design variation suggested by the Cited Document as an option.

B Heating step

The Cited Invention includes, as a step D, a step of "step D: covering a surface of a PVA-based resin layer of the laminate with a cover film, followed by heating the laminate in the state".

"A surface of a PVA-based resin layer of the laminate" of the Cited Invention corresponds to "the opposite side of the polarizing film from the resin substrate". From a technical viewpoint, since "a cover film" of the Cited Invention includes a function of protecting a polarizing film, "a cover film" of the Cited Invention corresponds to "the first protective film" of the Invention. While "the cover film" of the Cited Invention is "usable as an optical function film (paragraph [0057]), in paragraph [0060] of the Cited Document, it is described that "the above-described optical function film can function, for example, as a polarizing film, a protective film, a retardation film, or the like."

Therefore, a step, "step D: covering a surface of a PVA-based resin layer of the laminate with a cover film, followed by heating the laminate in the state", of the Cited Invention corresponds to "a step of laminating a first protective film on the opposite side of the polarizing film from the resin substrate, followed by heating" of the Invention.

C Step of laminating a second protective film

In the Cited Invention, while "the thermoplastic resin substrate and/or the cover film may be peeled for use", "the optical function film laminate 600" of the Cited Invention includes a construction in which "the optical function film 16 and the second optical function film 16' are each laminated on the polarizing film 12' through the adhesive layer 15", and "the adhesive layer is representatively formed of the PVA-based adhesive".

Of the polarizing film of the Cited Invention, the surface from which "the thermoplastic resin substrate is removed" corresponds to "the side from which the resin substrate of the polarizing film has been peeled". Of the polarizing film of the Cited Invention, either one of the optical function film (the optical function film 16 or the second optical function film 16', hereinafter referred to as "the peeling side optical function film") "laminated to the surface from which the thermoplastic resin substrate is removed through the adhesive layer 15" includes the function of protecting the polarizing film (similar to B described above). Therefore, the peeling side optical function film of the Cited Invention corresponds to "the second protective film" of the Invention. Moreover, since "the optical function film laminate 600" of the Cited Invention includes a construction in which "the optical function film 16 and the second optical function film 16' are laminated to the polarizing film 12' through the adhesive layer 15, as an presupposition thereof, the Cited Invention practically includes "a step of laminating the peeling side optical function film through the adhesive layer 15 to the side from which the thermoplastic resin substrate of the polarizing film is peeled" (hereinafter referred to as "the second lamination step").

Therefore, since the Cited Invention practically includes the second lamination step, it satisfies the requirements of "a step of laminating the second protective film to the side from which the resin substrate of the polarizing film is peeled".

D Lamination of the first protective film

While the Cited Invention includes "a step of covering the PVA-based resin layer surface with a cover film through an adhesive", "a water-based adhesive is preferably used for the adhesive". Therefore, the Cited Invention satisfies the requirements of "laminating the first protective film through a water-based adhesive" of the Invention.

E Moisture permeability

The Cited Invention, since "the moisture permeability of the cover film is 100 $g/m^2 \bullet 24h$ or less", satisfies the requirements of " the first protective film has moisture

permeability of 100 g/m$^2$•24h or less" of the Invention.

F Method of producing the polarizing plate

Since "the optical function film laminate 600 is such that the optical function film 16 and the second optical function film 16' are each laminated on the polarizing film 12' through the adhesive layer 15" of the Cited Invention, "the optical function film laminate 600" of the Invention corresponds to "the polarizing plate" of the Invention. It can be said that although "the usage of the polarizing film" of the Cited Invention is "a usage of a polarizing film" in terms of relation with the polarizing film, it is "a method of producing the optical function film laminate 600" in terms of relation with "the optical function film laminate 600".

Therefore, "the usage of the polarizing film" of the Cited Invention corresponds to "the method of producing of the polarizing plate" of the Invention.

(2) Corresponding features

The Invention and the Cited Invention correspond to each other in the following construction.

"A method of producing a polarizing plate, comprising:

a step of producing a polarizing film on the resin substrate by stretching and dyeing a laminate including a resin substrate and a polyvinyl alcohol-based resin layer formed on one side of the resin substrate;

a step of laminating a first protective film on the polarizing film on a side opposite the resin substrate, followed by heating;

a step of laminating a second protective film on a side from which the resin substrate of the polarizing film has been peeled; and

a step of laminating the first protective film through a water-based adhesive, wherein the first protective film has moisture permeability of 100 g/m$^2$•24h or less."

(3) The different features

The Invention and the Cited Invention are different (although not quite satisfactorily) in the following points.

A Different feature 1

While the Invention includes "a step of peeling the resin substrate" between "a step of laminating a first protective film on the opposite side of the polarizing film from the resin substrate, followed by heating" and "a step of laminating a second protective film on a side from which the resin substrate of the polarizing film has

been peeled", it is not apparent in the Cited Invention when the step of peeling thermoplastic resin substrate is performed.

In other words, while, (A) although Claim 1 of the application has a description reading: "including ... step, ... step, and ... step", since the Invention corresponds to Example 2 (paragraph [0103]), it is comprehended that the Invention includes "a step of peeling the resin substrate" between "a step of laminating a first protective film on the opposite side of the polarizing film from the resin substrate, followed by heating" and "a step of laminating a second protective film on a side from which the resin substrate of the polarizing film has been peeled", (B) although since paragraph [0035] of the Cited Document has a description reading: "here, the moisture permeability of the thermoplastic resin substrate is preferably as low as possible, because a larger amount of moisture present in the PVA-based resin layer can be held", it can be recognized that it is preferable not to peel the thermoplastic resin substrate in the stage of step D, since the Cited Document discloses, in addition to the Cited Invention (the embodiment of FIG. 4 (d)), embodiments such as that shown in FIG. 3 (a) and (b) in which the thermoplastic resin substrate 11' is not peeled, and the Cited Document has just a description in paragraph [0059] regarding a step of peeling the thermoplastic resin substrate reading: "in this embodiment, the above-described thermoplastic resin substrate has been removed", in the Cited Invention, it cannot be determined in which stage the peeling step is performed. In that respect, the Invention and the Cited Invention are at least different.

B The different feature 2

While the Invention includes "laminating the second protective film through an adhesive having moisture content of 10% or less", the Cited Invention includes "the adhesive layer is representatively formed of a PVA-based adhesive".

(4) Judgment

The judgment on the different features is as follows.

A The different feature 1

Paragraph [0056] of the Cited Document has a description reading: "the thickness of the polarizing film is representatively 25 μm or less, preferably 15 μm or less, more preferably 10 μm or less, still more preferably 7 μm or less, particularly preferably 5 μm or less". In other words, since the polarizing film of the Cited Invention is an extremely thin film, it is unrealistic to provide a step of peeling the thermoplastic resin substrate before step D, "step D: covering the PVA-based resin

layer surface of the laminate with a cover film, followed by heating the laminate in the state". Even with reference to steps disclosed in [FIG. 2] and paragraph [0055], a step of peeling the thermoplastic resin substrate does not exist. Moreover, paragraph [0056] following paragraph [0055] has a description reading: "the polarizing film of the present invention is obtained by the above-described production method". Paragraph [0057] following paragraph [0056] has a description reading: "any appropriate method can be adopted for a usage of the above-described polarizing film". In paragraphs [0058] to [0060], each embodiment of the optical film laminate ([FIG. 3] (a) and (b), and [FIG. 4] (a)-(d)) is described. Therefore, it is reasonable to comprehend that paragraphs [0056] to [0060] of the Cited Document disclose using the polarizing film produced with a production method having no step of peeling the thermoplastic resin substrate before step D as disclosed in [FIG. 2] and paragraph [0055] in such manners as illustrated in [FIG. 3] (a) and (b), or as illustrated in [FIG. 4] (a)-(d).

Therefore, since a construction associated with the different feature 1 is practically a construction included in the Cited Invention, the different feature 1 is not practically a different feature.

Or, since the polarizing film of the Cited Invention is extremely thin, a person skilled in the art who takes account of manufacturing easiness will judge that it is a better production method to adopt a construction associate with the different feature 1 than to provide a step of peeling the thermoplastic resin substrate before step D of the Cited Invention. Therefore, to adopt a construction associated with the different feature 1 in the Cited Invention is what a person skilled in the art could have easily done.

B The different feature 2

It is a known matter for a person skilled in the art that, when laminating a film to a polarizing film, draining performance is poor when a water-based adhesive is used, and there is a case where damage of the polarizing film or degradation of the polarization performance is caused (if necessary, refer to paragraph [0129] of Known example 1, paragraph [0104] of Known example 2, and paragraph [0150] of Known example 3), and it is at least described in Known examples 1 to 3 and well known.

Since the Cited Invention includes a construction capable of using the cover film as an optical function film when the cover film is not peeled, and it can be said that the second lamination step of the Cited Invention is performed in a state where a cover film having low moisture permeability has been laminated, draining

performance is relatively poor (there is a problem in manufacturing such as drying requiring a long period of time). Or, when the moisture permeability of a material of the peeling side optical function film is low, it can be said that draining performance is extremely poor.

Therefore, for a person skilled in the art who knows the above-described known matters or technologies described in Known examples 1 to 3, to adopt "an adhesive having moisture content of 10% or less" in place of the PVA-based adhesive of the Cited Invention is a matter which could have been easily done.

While "the adhesive layer is representatively formed of the PVA-based adhesive" described in the second lamination step of the Cited Invention, since the PVA-based adhesive is a water-based adhesive, examination has been made, just to be sure, as to whether disincentives exist to lead to the following.

In other words, in the Cited Invention, concerning the technical significance of "the surface of the PVA-based resin layer is covered with the cover film through an adhesive; a water-based adhesive is preferably used for the adhesive", paragraph [0038] of the Cited Document has a description reading: "the aqueous adhesive is preferably used. Moisture in the aqueous adhesive can migrate to the PVA-based resin layer. Thus, the stability of the iodine complex reduces. In particular, the iodine complex having low orientation property is brought into such a state as to be easily decomposed, because its original stability is low. As a result, the decomposition of the iodine complex having low orientation property can be selectively promoted". In other words, in the Cited Invention, "the surface of the PVA-based resin layer is covered with the cover film through an adhesive; a water-based adhesive is preferably used for the adhesive" has a positive reason.

On the other hand, paragraph [0060] of the Cited Document has a description reading: "The lamination of the respective layers constituting the optical laminate of the present invention is not limited to the illustrated examples, and any appropriate pressure-sensitive adhesive layer or adhesive layer is used. The pressure-sensitive adhesive layer is representatively formed of an acrylic pressure-sensitive adhesive. The adhesive layer is representatively formed of a PVA-based adhesive". In other words, concerning the PVA-based adhesive being used in the second lamination step of the Cited Invention, it has just the technical significance of illustrating a "representative" example.

Therefore, it is appropriate to interpret that there is no particular disincentive to adopt "an adhesive having moisture content of 10% or less" in place of the

PVA-based adhesive of the Cited Invention.

(5) On effect

Effects of the Invention stay within a range of effects expected from the Cited Invention and the well-known arts.

3 Summary

Since the Invention is something that could have been easily invented before the application by a person skilled in the art on the basis of the Cited Documents distributed in Japan or abroad before the application, the Appellant should not be granted a patent under the provisions of Article 29(2) of the Patent Act.

4 Appellant's allegation

(1) Concerning peeling step

The appellant argues in the Written Opinion that "Concerning the different feature 1, as the body recognized, it is specifically described in the Cited Document 1 that the thickness of the polarizing film is representatively 25 μm or less. The polarizing film of a thickness of 25 μm has sufficient self-supporting characteristics. Therefore, for example, concerning the polarizing film of a thickness of 25 μm, the recognition of the body that 'to provide a step of "peeling the resin substrate" before "a step of laminating the first protective film on the opposite side of the polarizing film from the resin substrate, followed by heating" is unrealistic' is not appropriate.

However, the description reading: "the thickness of the polarizing film is representatively 25 μm or less" (paragraph [0056]) does not mean that the thickness of the polarizing film is "representatively 25 μm", but means that the thickness of the polarizing film is "representatively 25 μm or less". The thickness of the polarizing film of the Cited Invention is preferably 5 μm or less (paragraph [0056]).

Moreover, even when it is assumed that the PVA resin film of 25 μm has self-supporting characteristics to a certain extent, it is natural to think that it is easily torn when the cover film is peeled.

Therefore, it is totally unrealistic to provide a step of peeling the thermoplastic resin substrate before step D of the Cited Invention, "step D: covering the PVA-based resin layer surface of the laminate with a cover film, followed by heating in the state", and the appellant's allegation cannot be accepted.

(2) On adhesive layer

The appellant argues in the Written Opinion that "the Cited Invention is an invention of improving the transmittance by heating the PVA-based resin layer in the presence of moisture after covering with a film of low moisture permeability (for example, paragraph 0035). In other words, the Cited Invention is an invention that positively uses the moisture in the layer, and it is specifically described in such an invention that a water-based adhesive capable of transferring the moisture to the PVA-based resin layer is preferable (paragraph 0038). Therefore, even when it is assumed that poor draining performance when a water-based adhesive is used is a known matter, the Cited Invention utilizes the poor draining performance (the resulting moisture in the layer). Therefore, since changing a water-based adhesive to a low moisture content adhesive is against the main objective of the principle of the Cited Invention, a person skilled in the art will never arrive at a low moisture content adhesive on the basis of the Cited Document 1, and will rather preclude it".

However, as was judged in the latter half of the above-described 2(4)B, the appellant's allegation cannot be accepted.

Paragraph [0034] of the Cited Document has a description reading: "the thermoplastic resin substrate side (lower side) and the surface side (upper side) of the PVA-based resin layer that has been formed on the thermoplastic resin substrate and has undergone the dyeing step and the stretching step are different from each other in construction. Specifically, the lower side and the upper side are different from each other in orientation property of the PVA-based resin, and the orientation property of the upper side tends to be lower than that of the lower side. The orientation property of the iodine complex present in the portion having the lower orientation property is also low. Accordingly, the complex not only contributes to the optical characteristics (particularly the polarization degree) to a small extent but also can be responsible for the reductions of the optical characteristics (particularly the transmittance)". The description also has a meaning that "the PVA-based resin layer that was formed on the thermoplastic resin substrate and went through a dyeing step and a stretching step has different constructions between the thermoplastic resin substrate side (lower side) and the surface side (upper side). Specifically, the orientation of the PVA-based resin is different between the upper side and the lower side, and the upper side tends to have a lower degree of orientation compared to the lower side. The iodine complex present at a part of high degree of orientation also has a high degree of orientation, and not only its contribution to the optical characteristics (particularly, the polarization degree) is high, but also it cannot be a cause of reducing the optical characteristics (particularly, the transmittance)".

It can be said that, when a person skilled in the art who knows the technology described in Known example 1 to Known example 3 interprets by reading differently the description of paragraph [0034] of the Cited Document, he or she can notice that it is preferable that the adhesive of the peeling side optical function film of the Cited Invention be made to have moisture content as low as possible; otherwise, the iodine complex that is produced to have high degree of orientation, high contribution to the polarization degree, not causing to reduce the transmittance is decomposed in vain.

Therefore, to change the water-based adhesive to the low moisture content adhesive is not against the main objective of the principle of the Cited Invention, and is rather along the main objective of the principle of the Cited Invention.

No. 3 Summary

As described above, the application shall be rejected even without examining the other Claims.

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

March 3, 2016

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| Chief administrative judge: | FUJIWARA, Keishi |
| Administrative judge: | HIGUCHI, Nobuhiro |
| Administrative judge: | SHIMIZU, Yasushi |