Appeal decision

Appeal No. 2015-5508

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The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2013-518357, entitled "Diesel Engine and Exhaust Aftertreatment System and Method of Treating Exhaust Gases from a Diesel Engine" (PCT International Application Publication No. WO2012/002973 published on January 5, 2012; Domestic Publication No. 2013-535603 of Japanese Translation of the same PCT international publication, published on September 12, 2013) 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 is a patent application whose international filing date is July 2, 2010, for which: the National Documents were submitted on December 28, 2012; the written submission of translation of the international application was submitted on February 28, 2013; and the written submission of translation of the Amendment under Article 34 of the Patent Cooperation Treaty was submitted on February 28, 2013. The reasons for refusal were notified on July 4, 2014 and the written opinion and the amendment were submitted on October 1, 2014. The decision of refusal was rendered on November 17, 2014, in response to which the appeal against the examiner's decision of refusal was filed on March 24, 2015 accompanied by the amendment submitted on the same date.

No. 2 Decision to dismiss the amendment dated March 24, 2015

Conclusion of Decision to Dismiss Amendment

The amendment dated March 24, 2015 (hereinafter referred to as "the Amendment") shall be dismissed.

Reason

1. The amendment

As the result of the Amendment, the description of claim 1 of the scope of claims of the case, which is as described in the following item (1), was amended to read as described in the following item (2).

(1) Claim 1 of the scope of claims prior to the Amendment

"[Claim 1]

A method of treating exhaust gases from a diesel engine (21), the method comprising the steps of:

operating the engine and passing exhaust gases through a diesel particulate filter (27);

operating the engine to obtain a first set of exhaust characteristics and injecting

fuel upstream of the diesel particulate filter (27) into the exhaust gases at a first rate of injection until at least one condition is attained so that that an active NO_2-based regeneration of the diesel particulate filter (27) takes place, the at least one condition including heating the diesel particulate filter (27) until a temperature thereof becomes higher than a predetermined heating temperature; and

after the at least one condition is attained, reducing a rate of fuel injection for the fuel injected into the exhaust gases and operating the engine until at least a second condition is attained to obtain a second set of exhaust characteristics so that the NO_2-based regeneration of the diesel particulate filter (27) takes place, the at least second condition including cooling the diesel particulate filter (27) until a temperature thereof becomes lower than a predetermined regeneration temperature, at least one characteristic of the first and second sets of characteristics being different."

(2) Claim 1 of the scope of claims after the Amendment

"[Claim 1]

A method of treating exhaust gases from a diesel engine (21), the method comprising the steps of:

operating the engine and passing exhaust gases through a diesel particulate filter (27);

operating the engine to obtain a first set of exhaust characteristics and injecting fuel upstream of the diesel particulate filter (27) into the exhaust gases at a first rate of injection until at least one condition is attained so that that an active NO_2-based regeneration of the diesel particulate filter (27) takes place, the at least one condition including heating the diesel particulate filter (27) until a temperature thereof becomes higher than a predetermined heating temperature, and also becomes below or near the bottom range of the temperatures at which active O_2 regeneration tends to occur but falling within a range where active NO_2 regeneration tends to occur; and

after the at least one condition is attained, reducing a rate of fuel injection for the fuel injected into the exhaust gases and operating the engine until at least a second condition is attained to obtain a second set of exhaust characteristics so that the NO_2-based regeneration of the diesel particulate filter (27) takes place, the at least second condition including cooling the diesel particulate filter (27) until a temperature thereof becomes lower than a predetermined regeneration temperature, at least one characteristic of the first and second sets of characteristics being different." (The underlines are given by the Appellant to indicate the amended portions.)

The Amendment is directed to addition of a delimitation to the technical matter of being "higher than a predetermined heating temperature" described in claim 1 prior to the Amendment and this delimitation clarifies that the technical matter at issue refers to the feature of "the predetermined temperature being below or near the bottom range of the temperatures at which active O_2 regeneration tends to occur but falling within a range where active NO_2 regeneration tends to occur."

Accordingly, the Amendment intends to delimit the matters specifying the invention described in claim 1 prior to the Amendment, the invention described in claim 1 prior to the Amendment and the invention described in claim 1 after the Amendment pertain to the same technical field and have the same technical problem to be solved, and therefore the Amendment is one that is to be made for the purpose of the restriction of the scope of claims according to Article 17-2(5) (ii) of the Patent Act.

In view of the above, it is examined below whether or not the invention according to claim 1 as amended by the Amendment (hereinafter referred to as "the Amended Invention") could have been patented independently at the time of filing of the patent application (i.e., whether or not the Amendment complies with the provision of Article 126(7) as applied mutatis mutandis under Article 17-2(6) of the Patent Act).

2. Descriptions, etc., of the Publication

Japanese Unexamined Patent Application Publication No. 2005-061363 (hereinafter referred to as "the Publication"), which is a publication distributed prior to the international filing date of the Application of the case and which was cited in the reasons for refusal of the examiner's decision, includes the following descriptions along with the drawings.

1a) "[Claim 1]

An emission purification device comprising:

an emission purification unit arranged in an exhaust passage of an internal combustion engine, the emission purification unit including a trap filter adapted to collect particulates in exhaust gases;

a temperature sensing unit configured to detect a temperature of the trap filter;

a regeneration time determination unit configured to make a determination regarding a regeneration time of the trap filter, the determination being made based on a degree of clogging of the trap filter; and

a control unit configured to control the internal combustion engine, the control unit including a normal mode according to which the internal combustion engine is

normally controlled and a forced regeneration mode according to which an amount of fuel injection of the internal combustion engine is increased for regeneration of the trap filter,

the control unit being configured to carry out control in accordance with the forced regeneration mode when the regeneration time determination unit determines that the regeneration time of the trap filter has arrived and the temperature of the trap filter detected by the temperature sensing unit is lower than a predetermined first set temperature to raise the temperature of the trap filter until it reaches a second set temperature, and to carry out control in accordance with the normal mode when the temperature of the trap filter that was raised has reached the second set temperature." ([Claim 1] of [Scope of Claims])

1b) "[0018]

The embodiment of the present invention is described in detail below with reference to the drawings.

FIG. 1 illustrates one embodiment of an emission purification device of the present invention. In this embodiment, the present invention is applied to a vehicle such as a truck equipped with a diesel engine.

In FIG. 1, the reference sign 11 denotes a diesel engine arranged in a vehicle such as a truck.

[0019]

An exhaust pipe 15 which forms an exhaust passage is connected to an exhaust manifold 13 of this diesel engine 11.

An emission purification unit 17 adapted to collect particulates in the emissions is arranged in the exhaust pipe 15.

This emission purification unit 17 has a casing 19, and an oxidation catalyst 21 and a trap filter 23 are accommodated in the casing 19." (Paragraphs [0018] and [0019])

1c) "[0023]

In addition, this control unit 31 is configured to control the amount of fuel injection fed from the common-rail-type fuel injection device 33 arranged in the diesel engine 11.

The control unit 31 has a regeneration time determination unit 35, a first map 37, and a second map 39.

The regeneration time determination unit 35 is configured to receive the signals input from the first pressure sensor 27 and the second pressure sensor 29, carry out an

operation of the differential pressure between the pressure of the entry-side and the pressure of the exit-side of the trap filter 23, and thereby detect the degree of clogging of the trap filter 23.

[0024]

In addition, the regeneration time of the trap filter 23 is determined to have arrived when the degree of clogging of the trap filter 23 exceeds a predetermined value.

A normal mode I in which the diesel engine 11 is normally controlled is set for the first map 37. A forced regeneration mode II in which the amount of fuel injection of the diesel engine 11 is increased for the regeneration of the trap filter 23 is set for the second map 39. [0025]

In addition, the control unit 31 carries out control in accordance with the forced regeneration mode II, as illustrated in FIG. 2, when the regeneration time determination unit 35 determines that the regeneration time of the trap filter 23 has arrived and the temperature of the trap filter 23 detected by the temperature sensor 25 is lower than the predetermined first set temperature T2 to raise the temperature of the trap filter 23 until it reaches the second set temperature T1, and carries out control in accordance with the normal mode I when the temperature of the trap filter 23 that was raised has reached the second set temperature T1." (Paragraphs [0023] to [0025])

1d) "[0026]

Specifically, referring to FIG. 2, the x-axis represents elapsed time and the y-axis represents the temperature T inside the trap filter.

In addition, the control in accordance with the forced regeneration mode II is carried out first when the regeneration time determination unit 35 determines that the regeneration time of the trap filter 23 has arrived and the temperature T of the trap filter 23 detected by the temperature sensor 25 is lower than the predetermined first set temperature T2, for example, 640°C, and the temperature of the trap filter 23 is made to rise to reach the second set temperature T1, for example, 650°C.

[0027]

Also, the control in accordance with the normal mode I is performed when the temperature of the trap filter 23 has been raised to reach the second set temperature T1.

In addition, when the control in accordance with the normal mode I is performed, for example, for five minutes, the temperature inside the trap filter 23 becomes lower than the first set temperature T2 and the control unit 31 performs the control in accordance with the forced regeneration mode II.

[0028]

In this manner, the control unit 31 performs the control in accordance with the forced regeneration mode II and the control in accordance with the normal mode I alternately.

In addition, when the differential pressure between the pressure of the entry-side and the pressure of the exit-side of the trap filter 23 becomes equal to or lower than the predetermined value as a result of combustion of the particulates within the trap filter 23, then the state of determination by the regeneration time determination unit 35 that the regeneration time of the trap filter 23 has arrived is exited, and the control only in accordance with the normal mode I is re-entered." (Paragraphs [0026] to [0028])

1e) "[0029]

FIG. 3 is a flowchart that illustrates the operation of the above-described emission purification device.

First, in step S1, it is determined whether or not the forced regeneration time has arrived.

This determination is carried out by the regeneration time determination unit 35.

In addition, when the forced regeneration time has arrived, it is determined in step S2 whether or not the temperature T of the trap filter 23 detected by the temperature sensor 25 is lower than the predetermined first set temperature T2.

[0030]

In addition, when the temperature T is lower than the first set temperature T2, then the mode of control is switched to the forced regeneration mode II in step S3 and the temperature of the trap filter 23 is made to rise.

Next, in step S4, it is determined whether or not the temperature of the trap filter 23 has reached the second set temperature T1.

In addition, when the temperature has reached the second set temperature T1, the control in accordance with the normal mode I is carried out in step S5.

[0031]

Next, in step S6, it is determined whether or not the temperature T of the trap filter 23 is lower than the predetermined first set temperature T2.

In addition, when the temperature T is lower than the first set temperature T2, whether or not the clogging of the trap filter 23 has been resolved is determined in step S7.

In this embodiment, the determination that the clogging of the trap filter 23 has been resolved is made when the differential pressure between the pressure of the entry-side and the pressure of the exit-side of the trap filter 23 has become equal to or lower

than a predetermined value.
[0032]

In addition, when the clogging of the trap filter 23 has been resolved, the state of the determination by the regeneration time determination unit 35 that the regeneration time of the trap filter 23 has arrived is exited in step S8, and the mode of control only in accordance with the normal mode I is re-entered.

In the above-described emission purification device, the control in accordance with the forced regeneration mode II is carried out when the regeneration time determination unit 35 determines the regeneration time of the trap filter 23 has arrived and also the temperature of the trap filter 23 detected by the temperature sensing unit is lower than the predetermined first set temperature T2 to raise the temperature of the trap filter 23 until it reaches the second set temperature T1, and the control in accordance with the normal mode I is carried out when the temperature of the trap filter 23 has been raised to reach the second set temperature T1. By this configuration, it becomes possible to carry out the forced regeneration of the trap filter 23 in accordance with a very simple mode of control.
[0033]

Specifically, since the above-described emission purification device is configured to use heat capacity of the oxidation catalyst 21 and the trap filter 23 during the forced regeneration of the trap filter 23 without constantly maintaining the temperature of the trap filter 23 to be equal to a predetermined temperature, and repeatedly perform the forced regeneration mode II and the normal mode I alternately and thus combust the particulates, the mode of control is considerably facilitated.

Also, it becomes possible to eliminate sensors and the like needed to control the flow rate of the exhaust gases and the necessary thermal inputs, which leads to cost reduction." (Paragraphs [0029] to [0033]).

In view of the above descriptions 1a), 1e) and FIGS. 1 to 3, the following facts will be appreciated.

1f) In view of the above descriptions 1a), 1b) and FIG. 1, it is noted that the emission purification device described in the Publication is configured to catch the particulates in the emissions via the trap filter 23 arranged in the exhaust pipe 15 in which the emissions of the diesel engine 11 flows and thereby carry out the emission purification of the diesel engine 11.

1g) In view of the above description 1d) and FIGS. 2 and 3, it is noted that the emission purification device described in the Publication is configured to raise the temperature of the trap filter 23 until it reaches the second set temperature T1 through the control in accordance with the forced regeneration mode II when the temperature of the trap filter 23 is lower than the first set temperature T2, and is configured to carry out the control in accordance with the normal mode I until the temperature of the trap filter 23 becomes lower than the first set temperature T2 when the temperature of the trap filter 23 has reached the second set temperature T1.

1h) In view of the above description 1c), it is noted that the control in accordance with the forced regeneration mode II in the emission purification device described in the Publication causes an increase in the amount of fuel injection of the diesel engine 11.

In view of the entirety of the above descriptions 1a) to 1h) and FIGS. 1 to 3, the following invention (hereinafter referred to as "the Cited Invention") is described in the Publication.

"A method of performing purification of emissions of a diesel engine 11, the method comprising the stages of:

operating the diesel engine 11 and feeding the emissions via the trap filter 23;

increasing the amount of the fuel injection by the control in accordance with the forced regeneration mode II such that regeneration of the trap filter 23 is performed until the temperature of the trap filter 23 reaches the second set temperature T1; and

after the temperature of the trap filter 23 has reached the second set temperature T1, operating the diesel engine 11 by the control in accordance with the normal mode I until the (temperature of the) trap filter 23 becomes lower than the first set temperature T2 so that the regeneration of the trap filter 23 occurs."

3. Comparison / judgment

The claimed invention as amended is compared with the Cited Invention.

The "diesel engine 11" in the Cited Invention corresponds, in terms of its function, configuration, and technical significance, to the "diesel engine" in the Amended Invention. Likewise, the following correspondences are found (between the Cited Invention and the Amended Invention). The feature "performing purification of emissions" corresponds to the feature "treating exhaust gases" (of the latter invention). The feature "operating" corresponds to the feature "operating." The "trap filter 23"

corresponds to the "diesel particulate filter." The "emissions" corresponds to the "exhaust gas." The "stage" corresponds to the "step." The feature "increasing the amount of the fuel injection by control in accordance with the forced regeneration mode II" corresponds to the feature "injecting fuel at a first rate of injection." The feature "operating the diesel engine 11 by control in accordance with the normal mode I" corresponds to the feature "reducing a rate of fuel injection for the fuel and operating the engine."

In addition, the feature "the temperature of the trap filter 23 reaches the second set temperature T1" in the Cited Invention and the feature "at least one condition is attained, the at least one condition including heating the diesel particulate filter (27) until a temperature thereof becomes higher than a predetermined heating temperature, the predetermined temperature being below or near the bottom range of the temperatures at which active O_2 regeneration tends to occur but falling within a range where active NO_2 regeneration tends to occur" in the Amended Invention are identical with each other as long as (they are adapted such that) "at least one condition is attained, the at least one condition including the temperature of the diesel particulate filter becoming a predetermined temperature."

Also, the feature "after the temperature of the trap filter 23 has reached the second set temperature T1" in the Cited Invention corresponds to the feature "after the at least one condition is attained " in the Amended Invention.

Further, the feature "regeneration of the trap filter 23" in the Cited Invention and the feature "active NO_2-based regeneration of the diesel particulate filter" in the Amended Invention are identical with each other as long as they are associated with the "regeneration of the diesel particulate filter."

The feature "operating ... until the (temperature of the) trap filter 23 becomes lower than the first set temperature T2" in the Cited Invention and the feature "operating ... until at least a second condition is attained to obtain a second set of exhaust characteristics, the at least second condition including cooling the diesel particulate filter (27) until a temperature thereof becomes lower than a predetermined regeneration temperature" in the Amended Invention are identical as long as they are directed to "operating ... until at least a second condition is attained including cooling the diesel particulate filter until a temperature thereof becomes lower than a predetermined temperature."

Further, it is clear in light of the common technical knowledge that, when the diesel engine 11 is operated in the "forced regeneration mode II" and the "normal mode I" in the Cited Invention, then the operation of the engine in these modes allows for

acquisition of two distinct sets of exhaust characteristics that correspond to the "first set of exhaust characteristics" and the "second set of exhaust characteristics" in the Amended Invention, for the "forced regeneration mode II" and the "normal mode I" are different from each other in their amounts of fuel injected.

Hence, the corresponding feature and the different features of these two inventions are identified as follows.

[The corresponding feature]
"A method of treating exhaust gases of a diesel engine, the method comprising the steps of:

operating the engine and passing exhaust gases through a diesel particulate filter;

operating the engine to obtain a first set of exhaust characteristics and injecting fuel at a first rate of injection until at least one condition is attained so that regeneration of the diesel particulate filter occurs, the at least one condition including the temperature of the diesel particulate filter becoming a predetermined temperature; and

after the at least one condition is attained, reducing a rate of fuel injection for the fuel injected into the exhaust gases and operating the engine until at least a second condition is attained to obtain a second set of exhaust characteristics so that the regeneration of the diesel particulate filter occurs, the at least second condition including cooling the diesel particulate filter until a temperature thereof becomes lower than a predetermined regeneration temperature, at least one characteristic of the first and second sets of characteristics being different."

[The different feature 1]

With regard to the feature "at least one condition is attained, the at least one condition including the temperature of the diesel particulate filter becoming a predetermined temperature," the Amended Invention is configured for "operating ... until at least one condition is attained, the at least one condition including heating the diesel particulate filter (27) until a temperature thereof becomes higher than a predetermined heating temperature, the predetermined temperature being below or near the bottom range of the temperatures at which active O_2 regeneration tends to occur but falling within a range where active NO_2 regeneration tends to occur," whilst the Cited Invention is configured for "operating ... until the temperature of the trap filter 23 reaches the second set temperature T1."

[The different feature 2]

With regard to the feature "operating ... until at least a second condition is attained, the at least second condition including cooling the diesel particulate filter until a temperature thereof becomes lower than a predetermined regeneration temperature," the Amended Invention is configured for "operating ... until at least a second condition is attained, the at least second condition including cooling the diesel particulate filter until a temperature thereof becomes lower than a predetermined regeneration temperature," whilst the Cited Invention is configured for "operating ... until the (temperature of the) trap filter 23 becomes lower than the first set temperature T2."

[The different feature 3]

With regard to the feature "regeneration of the diesel particulate filter," the Amended Invention is directed to "active NO_2-based regeneration of the diesel particulate filter," whilst the Cited Invention is directed to the "regeneration of the trap filter 23."

[The different feature 4]

With regard to the implementation of the "regeneration of the diesel particulate filter," the Amended Invention is configured such that the fuel is injected "upstream of the diesel particulate filter into the exhaust gases" whilst the Cited Invention fails to specifically identify the portion where the fuel is injected.

The above different features are examined below.

[Regarding the different features 1 to 3]

In the context of methods of realizing regeneration of diesel particulate filters, when the regeneration is realized using active O_2, the temperature condition will be extremely high, which may cause degradation of the capability and durability of an aftertreatment device for treating the exhaust gases. In this context, it had been well known prior to the international filing date of the present application to use NO_2 as the oxidant for the smoke caught by the diesel particulate filter; and for that purpose make the temperature for the regeneration of the diesel particulate filter correspond to the predetermined temperature below the temperatures at which regeneration using active O_2 takes place and falling within a range where active NO_2 regeneration tends to occur (for example, see the PCT international publication No. 2009/100412, Page 2, Lines 7 to 16, pages 38, Lines 18 to 20 (for Japanese translation, see the publication of Japanese

translation of the PCT international publication No. 2011-511897, Paragraphs [0005] and [0077]), and see also the PCT international publication No. 2009/100413, Page 2, Lines 7 to 19, (for Japanese translation, see the publication of Japanese translation of the PCT international publication No. 2011-511898, Paragraphs [0005] and [0068]). This is hereinafter referred to as "the Well-Known Art 1").

Hence, it would have been easily arrived at by a person skilled in the art to modify the Cited Invention in order to solve the general technical problem in the technical field of preventing degradation of the capability and durability of the aftertreatment device for treating the exhaust gases by applying the above Well-Known Art 1 to the Cited Invention; performing the regeneration of the trap filter 23 with the temperature below the temperatures at which regeneration using active O_2 takes place and falling within a range where active NO_2 regeneration tends to occur; at this point making the "second set temperature T1" correspond to the temperature "being below or near the bottom range of the temperatures at which active O_2 regeneration tends to occur but falling within a range where active NO_2 regeneration tends to occur"; further making the temperature that is "lower than the first set temperature T2" correspond to the temperature that is "lower than the predetermined regeneration temperature" in the active NO_2 regeneration; and thereby realizing the matters specifying the invention of the Amended Invention according to the different features 1 to 3.

[Regarding the different feature 4]

It had been well known prior to the international filing date of the present application, in the context of feeding the unburnt fuel for realizing the regeneration of the diesel particulate filter, to inject the fuel upstream of the diesel particulate filter into the exhaust gases (for example, see Japanese Patent Publication No. 2009-275561, Paragraphs [0006], [0007], and FIG. 1, and see also Japanese Patent Publication No. 2009-293431, Paragraph [0006] and the fuel injection valve 21 of FIGS. 1 and 4. This is hereinafter referred to as "the Well-Known Art 2").

Hence, it would have been easily arrived at by a person skilled in the art to modify the Cited Invention, in the context of realizing the regeneration of the diesel particulate filter, by applying the above Well-Known Art 2 thereto; injecting the fuel upstream of the trap filter 23 into the exhaust gases; thus feeding the unburnt fuel; and thereby realizing the matters specifying the invention of the Amended Invention according to the above different feature 4.

In addition, the Amended Invention as a whole does not achieve any remarkable

effect beyond what is predicted from the Cited Invention and the Well-Known Arts 1 and 2.

Accordingly, the Amended Invention is not one that could have been patented independently at the time of filing of the patent application as falling under the provision of Article 29(2) of the Patent Act, because it could have been easily made by a person skilled in the art on the basis of the Cited Invention and the Well-Known Arts 1 and 2.

4. Closing

As has been examined in the above section, the Amendment fails to comply with the provision of Article 126(7) as applied mutatis mutandis under Article 17-2(6) of the Patent Act and accordingly shall be dismissed pursuant to the provision of Article 53(1) as applied mutatis mutandis under Article 159(1) with due replacement of the terms made thereto as specified in the same Article 159(1) of the Act.

Therefore, the decision to dismiss the Amendment shall be made as stated in the Conclusion of Decision to Dismiss Amendment.

No. 3 Regarding the Invention

1. The Invention

Since the Amendment has been dismissed as stated above, the invention according to claim 1 of the present application (hereinafter referred to as "the Invention of the case") is identified as the one that is described in the above section "No. 2, [Reason] 1. (1)" in view of the scope of claims as amended by the Amendment submitted on October 1, 2014, and the translation of the Description and the translation of the drawings accompanying the written submission of translation of the international application submitted on February 28, 2013.

2. Descriptions of the publications, etc.

The Publication cited in the reasons for refusal of the examiner's decision, the described matters in Cited Publications, and the Cited Invention are as described in the above section "No. 2, [Reason] 2."

3. Comparison / judgment

The Invention of the case is an invention that corresponds to the Amended

Invention except that the feature "the predetermined temperature being below or near the bottom range of the temperatures at which active O_2 regeneration tends to occur but falling within a range where active NO_2 regeneration tends to occur" is removed therefrom, which is a limitation regarding the feature of "(being) higher than a predetermined heating temperature" in the Amended Invention, as examined in the above section "No. 2, [Reason] 1."

As such, since the Amended Invention, which covers all of the matters specifying the Invention of the case, could have been easily made by a person skilled in the art on the basis of the Cited Invention and the Well-Known Arts 1 and 2 as stated in the above section "No. 2, [Reason] 3," the Invention of the case could also have been easily made by a person skilled in the art on the basis of the Cited Invention and the Well-Known Arts 1 and 2.

4. Summary

In view of the foregoing, the Invention of the case could have been easily made by a person skilled in the art on the basis of the Cited Invention and the Well-Known Arts 1 and 2 and therefore is not patentable under the provision of Article 29(2) of the Patent Act.

No. 4 Closing

As has been examined in the above section No. 3, the present application should be rejected, because the Invention of the case is not patentable under the provision of Article 29(2) of the Patent Act.

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

November 24, 2015

Chief administrative judge: KATO, Tomoya
Administrative judge: MATSUSHITA, Akira
Administrative judge: MAKIHARA, Susumu