

Appeal Decision

Appeal No. 2019-9557

Appellant R. J. Reynolds Tobacco Company

Patent Attorney KAWAGUTI & PARTNERS INTELLECTUAL PROPERTY
LAW FIRM

The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2016-533394, entitled "TOBACCO-DERIVED PYROLYSIS OIL" (International Publication No. WO 2015/021137 published on February 12, 2015, National Publication of International Patent Application No. 2016-526921 published on September 8, 2016) has resulted in the following appeal decision.

Conclusion

The appeal of the case was groundless.

Reason

No. 1 History of the procedures

The application was originally filed on August 6, 2014 as an international filing date (claim of priority under the Paris Convention was received by the foreign receiving office on August 8, 2013 in the US), and the history of the procedures is as follows:

March 16, 2016 Submission of translation of amendment under Article 34 of the Patent Cooperation Treaty

As of July 18, 2018 Notice of reasons for refusal

October 19, 2018 Submission of written opinion

As of March 13, 2019 Examiner's decision of refusal

July 18, 2019 Submission of written request for appeal and written amendment

August 28, 2019 Submission of written amendment in which statement of the request in the written request for appeal is amended

As of June 25, 2020 Notice of reasons for refusal by the body

January 4, 2021 Submission of written amendment

January 5, 2021 Submission of written opinion

No. 2 The Invention

In light of the scope of claims for patent amended by the written amendment submitted on January 4, 2021, it is recognized that the inventions according to Claims 1 to 34 of the application are as recited in Claims 1 to 34 of the scope of claims for patent. The invention according to Claim 18 of the application (hereinafter referred to as "the Invention") is as follows:

"[Claim 18]

A method of providing a tobacco-derived pyrolysis oil, comprising:
obtaining a tobacco material;
pyrolyzing the tobacco material to produce char and a vapor product;
condensing and collecting the vapor product to give a tobacco-derived pyrolysis oil; and
incorporating the tobacco-derived pyrolysis oil into a tobacco product,
wherein the tobacco product is selected from the group consisting of a smoking article, a smokeless tobacco product, and an electronic smoking article."

No. 3 Reasons for refusal of the body

The reason for refusal notified by the body for Claim 18 on June 25, 2020 is as follows:

[Reason] The invention according to Claim 18 of the application could have been easily made by a person who had ordinary skill in the art belonging to the invention before the filing of the application, based on inventions described in publications below which had been distributed in Japan or a foreign country before the filing of the application, and accordingly, the Appellant should not be granted a patent under the provisions of Article 29(2) of the Patent Act.

<List of the Cited Documents>

1. Japanese Unexamined Patent Application Publication No. 2003-259855 (hereinafter referred to as "Cited Document 1")
2. Chinese Unexamined Patent Application Publication No. 102408410 (hereinafter referred to as "Cited Document 2")

No. 4 Judgment by the body

1. Cited Document 1

Cited Document 1, which was cited in the reason for refusal notified by the body and distributed before the priority date of the application, describes the following matters regarding "a smoking article and a smoking system for delivering an aerosol". (The underlines have been added by the body for the purpose of facilitating understanding. The same applies hereafter.)

(1) Description of Cited Document 1

"[0001] [Field of the Invention] The present invention relates to a smoking device (article) and a smoking system. In particular, the invention relates to a smoking device (article) and a smoking system that generate an aerosol in response to heated air."

"[0031]

[Embodiments of the Invention] FIG. 1 depicts an article 10 that includes a tube 12 surrounding an aerosol forming substrate 14. As used herein, the aerosol forming substrate 14 is a substrate containing an aerosol forming component. The tube 12 is hollow and defines an air passageway between a heating end 18 and a user/mouth end 20. The tube 12 is heat resistant and will not burn upon application of a flame 21 to the heating end 18. Suitable materials for use as the tube 12 will be set forth below in greater detail.

[0032] The aerosol forming substrate 14 is positioned within the tube to fill the inner diameter of the tube. In addition, the aerosol forming substrate 14 is positioned within the tube so that its distal end 15 is recessed from the heating end 18 of the tube 12. The tube has an internal diameter d of between 3 and 16 mm. The gap 16 is of sufficient length to prevent direct contact of a flame with the distal end of the aerosol supported substrate. The distal end of the substrate 14 is preferably recessed from the heating end of the tube a distance of between 2 and 10 times the gap diameter d . Therefore, the gap is at least 6 mm. This forms an air gap or air conduit 16 between the heating end 18 and the distal end of the substrate 14. The air conduit 16 provides a path for hot gases to enter the article 10 from the flame 21 to heat the substrate 14 without igniting or substantially burning the substrate 14. The aerosol forming substrate is air transmissive, thus creating an air transmissive path from the mouth end 20 of the tube 12 to the heating end 18. The aerosol forming substrate 14 also contributes an aerosol to heated air that passes through it.

[0033] During use of the article 10, as seen in FIG. 7, a user applies a flame 21 to the heating end 18 of the tube 12. This causes hot air and hot gases from the flame 21 to enter the air conduit 16 within the tube 12 when the user applies suction with his/her mouth to the mouth end 20 of the tube 12. This causes the hot gases produced by the flame 21 to enter the air passageway within the tube 12. As the user applies suction, the

hot gases travel through the aerosol forming substrate 14, which dispenses an aerosol to the hot gases. Then, the hot air with the aerosol passes into the mouth of the user, producing a pleasurable effect.

[0034] The air conduit or gap 16 is typically at least two centimeters in length and preferably between two and six centimeters in length. The length of the gap is chosen in order to convey hot gases from the flame 21 to the substrate 14 without substantially burning or igniting the substrate 14. The length of the air conduit 16, in order to accomplish this goal, depends upon the diameter of the tube 12. Two to six centimeters is preferred for a tube of conventional cigarette dimensions. If the diameter of the tube 12 is different, the distal end 15 may be recessed more or less than the above range in order to preserve an aspect ratio between the length of recess and the diameter of the tube 12.

[0035] The aerosol forming substrate 14 comprises a support material having one or more distillable substances imbued therein. Suitable support materials include virtually anything that is porous enough to transmit air and absorbent enough to retain distillable substances. Preferred support materials include, for example, fibrous cellulosic material such as paper, cotton, wood pulp, and combinations thereof. In addition, the support material may be any of tobacco or reconstituted tobacco, carbolic acid-treated cellulosic material, metal wool, ceramic wool, and porous ceramic. In addition, polymeric materials having sufficient porosity and absorbency may be used.

[0036] Distillable substances for imbibing into the support material are selected to provide a pleasurable sensation to the user. The distillable substances should volatilize in response to heating by the hot gases from the flame 21. Suitable distillable substances include water, polyhydric alcohols such as glycerin, propylene glycol, triethylene glycol, glycerol triacetate, triethylene glycol diacetate, and combinations thereof. Other examples are tobacco extract, tobacco pyrolysates, aliphatic esters of mono-, di- or polycarboxylic acids, such as methyl stearate, dimethyl dodecandioate, dimethyl tetradecandioate, and mixtures thereof. In addition, flavors may be added to the distillable substances to produce a desired taste effect. Examples of flavorings include cocoa butter, chocolate liquor, waxes, oils, and combinations thereof. In addition, menthol flavor may be added to simulate sensations produced by conventional menthol cigarettes.

[0037] The distillable substances may be imbued into the support material by dipping the support material into a mixture of distillable substances or by spraying the distillable substances onto the support material. Alternatively, the distillable substance mixture may be forced into the support material under pressure. The aerosol forming substrate

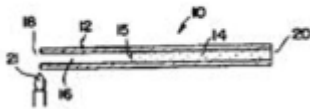
14 may be inserted into a preformed tube 12, or the tube 12 may be wrapped around the aerosol forming substrate 14, or the substrate 14 may be wrapped in a combustion resistant wrapper and the resulting article inserted into the tube 12.

[0038] The tube 12 is non-combustible upon application of a flame or at least not easily ignited. Suitable materials for the tube 12 are ceramic, meerschaum, metal, paper, paper board, reconstituted tobacco, wood, bamboo, glass, metal foil, and combinations thereof. Any of the foregoing materials may be treated to prevent combustion. Chemical treatments for reducing a propensity for combustion are well known in the art.

[0039] In addition, suitable plastics such as Bakelite may be used for the tube 12. The tube 12 may be formed in any convenient manner such as, for example, injection blow molding, extrusion and conventional molding. When the tube is preformed, the aerosol forming substrate 14 is typically inserted into the formed tube 12. Alternatively, the tube 14 may be formed from a planar member or sheet, for example, a chemically treated piece of paper. When the article 10 is made using a sheet for the material of the tube 12, the sheet is typically rolled around the aerosol forming substrate 14 during manufacture. While particular examples of forming the article 10 have been set forth, any convenient method of manufacturing the article 10 may be used. For example, the tube 12 may be made of a composite of materials. In addition, the tube 12 may be integral or monolithic, or may include a plurality of sections or may be layered."

"

【图 1】



【图 1】

[FIG. 1]

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【図7】



【図7】 [FIG. 7]

"
(2) Matters that can be found from (1) above

From the descriptions "[0033] ... the hot gases produced by the flame 21 to enter the air passageway within the tube 12. As the user applies suction, the hot gases travel through the aerosol forming substrate 14, which dispenses an aerosol to the hot gases. Then, the hot air with the aerosol passes into the mouth of the user, producing a pleasurable effect.", "[0035] The aerosol forming substrate 14 comprises a support material having one or more distillable substances imbued therein. ...", and "[0036] Distillable substances for imbibing into the support material are selected to provide a pleasurable sensation to the user. The distillable substances should volatilize in response to heating by the hot gases from the flame 21. ..." in (1) above, and FIGS. 1 and 7, it can be found that a distillable substance imbued in a support material is provided to the mouth of a user by volatilizing as the hot gases produced by a flame 21 enter an air passageway within a formed tube 12.

(3) Cited Invention

In light of (1) and (2) above, Cited Document 1 describes the following invention (hereinafter referred to as the "Cited Invention"):

"A method of providing one or more distillable substances to the mouth of a user, wherein the method is conducted by: inserting an aerosol forming substrate 14, which comprises a support material having one or more distillable substances imbued therein, into a formed tube 12 thereby to constitute an article 10; and volatilizing the one or more distillable substances containing a tobacco pyrolysate and having imbued in the support material as

the hot gases produced by a flame 21 enter an air passageway within the formed tube 12."

2. Cited Document 2

Cited Document 2, which was cited in the reason for refusal notified by the body and distributed before the priority date of the application, describes the following matters regarding "a method of extracting 1-methyl-2-(3-pyridyl)tetrahydropyrrole."

(1) Description of Cited Document 2

"

[0017] 如图1所示,本发明的具体方案是:

一、1-甲基-2-(3-吡啶基)四氢吡咯母液的制备:

烟草生物质粉碎后,置于热解釜中进行生物质慢速热解,热解温度为450℃-550℃,热解产生的生物质热解油气通过冷凝管冷凝后,收集冷凝液。待冷凝管无热解烟气产生后,停止热解。冷凝液静置后分为三层:中层为水相混合物(即1-甲基-2-(3-吡啶基)四氢吡咯母液);上层及下层为黑色油相液体,该油相为副产品木焦油。热解后剩余的固体为生物质炭,不可冷凝的尾气用于燃烧供热或发电。本方法可实现烟草生物质的综合利用,并通过温度的控制,使1-甲基-2-(3-吡啶基)四氢吡咯有效挥发并避免大量分解,同时,通过间接冷凝,提高冷凝液中1-甲基-2-(3-吡啶基)四氢吡咯含量。

"

(Translation by the body: As shown in FIG. 1, the specific means of the invention are as follows:

I. 1-Methyl-2-(3-pyridyl)tetrahydropyrrole mother liquor is prepared as follows:

Tobacco biomass is pulverized and then placed in a pyrolysis can to conduct biomass slow pyrolysis at a pyrolysis temperature of 450°C to 550°C. Oil gas of the biomass pyrolysis produced by the pyrolysis is collected as a condensate after cooling a cooling tube. The pyrolysis is stopped when no pyrolysis fume gas is generated from the cooling tube. The condensate after precipitated is divided into three layers: the middle layer is Aqueous Phase Mixture 1 (i.e., 1-methyl-2-(3-pyridyl)tetrahydropyrrole mother liquor); the upper and lower layers are black oil phase fluids. These oil phases are by-product wood tar. After the pyrolysis, a residual solid is biomass charcoal, and non-condensable exhaust gas is burned for heating or power generation. This method can realize the overall utilization of tobacco biomass and increase the content of 1-methyl-2-(3-pyridyl)tetrahydropyrrole in the condensate by effectively volatilizing 1-methyl-2-(3-pyridyl)tetrahydropyrrole without decomposing in large amounts, through the control of over-temperature, and at the same time, by condensing indirectly.)

Note that "1-methyl-2(3-pyridyl)tetrahydropyrrole" is recognized as "nicotine" from common general technical knowledge.

(2) Described Matter in Cited Document 2

In light of (1) above, Cited Document 2 describes the following matter (hereinafter referred to as "Described matter in Cited Document 2"):

"Tobacco biomass is pulverized and then pyrolyzed (450°C to 550°C) to collect an oil gas condensate. After the condensate is precipitated, 1-methyl-2(3-pyridyl)tetrahydropyrrole (nicotine), which is the middle layer of the three layers, is extracted, and a residual solid after the pyrolysis is used as biomass charcoal."

3. Comparison / Judgment

The Invention and the Cited Invention are compared below. The "tobacco pyrolysate" as "one or more distillable substances" in the Cited Invention corresponds to the "tobacco-derived pyrolysis oil" in the Invention, because according to the phrase, the "tobacco pyrolysate" has been obtained by pyrolyzing tobacco and is a distillable substance.

In addition, the "article 10" in the Cited Invention corresponds to the "tobacco product" which is "selected from the group consisting of a smoking article, a smokeless tobacco product, and an electronic smoking article" in the Invention.

Further, "inserting an aerosol forming substrate 14, which comprises a support material having one or more distillable substances imbued therein, into a formed tube 12 thereby to constitute a smoking article" in the Cited Invention includes the "tobacco pyrolysate" as "one or more distillable substances" and thus corresponds to "incorporating the tobacco-derived pyrolysis oil into a tobacco product" in the Invention.

Furthermore, the "method of providing one or more distillable substances to the mouth of a user, wherein the method is conducted by "volatilizing" the "distillable substances containing the tobacco pyrolysate" in the Cited Invention corresponds to the "method of providing a tobacco-derived pyrolysis oil" in the Invention.

Therefore, the corresponding feature and the different feature between the two inventions are as follows.

[Corresponding Feature]

"A method of providing a tobacco-derived pyrolysis oil, comprising:
incorporating the tobacco-derived pyrolysis oil into a tobacco product,
wherein the tobacco product is selected from the group consisting of a smoking

article, a smokeless tobacco product, and an electronic smoking article."

[Different Feature]

In the Invention, in order "to give a tobacco-derived pyrolysis oil", "obtaining a tobacco material", "pyrolyzing the tobacco material to produce char and a vapor product", "condensing and collecting the vapor product" are conducted. In contrast, in the Cited Invention, it is not clear how the "tobacco pyrolysate" has been obtained.

The different feature will now be discussed below.

[Regarding Different Feature]

Described matter in Cited Document 2 is that "tobacco biomass is pulverized and then pyrolyzed (450°C to 550°C) to collect an oil gas condensate. After the condensate is precipitated, 1-methyl-2(3-pyridyl)tetrahydropyrrole (nicotine), which is the middle layer of the three divided layers, is extracted, and the residual solid after the pyrolysis is used as biomass charcoal." Then, it is clear that the described matter in Cited Document 2 is to obtain tobacco biomass after pulverizing and prior to pyrolyzing.

Thus, when the described matter in Cited Document 2 is summarized in accordance with the terms of the Invention, it can be understood that "the method of obtaining 1-methyl-2(3-pyridyl)tetrahydropyrrole (nicotine) <tobacco-derived pyrolysis oil> is a technology by: obtaining tobacco biomass <tobacco material>; pulverizing the tobacco biomass <tobacco material> and then pyrolyzing <pyrolyzing> the pulverized tobacco biomass to obtain biomass charcoal <char> and oil gas <vapor product>; collecting an oil gas <vapor product> condensate <condensing and collecting>; and extracting 1-methyl-2(3-pyridyl)tetrahydropyrrole (nicotine) <tobacco-derived pyrolysis oil>, which is the middle layer of the three divided layers after the oil gas condensate is precipitated" (hereinafter referred to as "Technology of Cited Document 2"). Note that the phrases in < > are the terms of the Invention.).

Further, the Cited Invention constitutes an article 10; that is, a so-called smoking device which "provides a distillable substance to the mouth of a user by volatilizing the distillable substance", and there is no difficulty in that the smoking device contains nicotine which is a typical ingredient contained in a tobacco; rather such configuration of the smoking device is natural to adopt. Thus, a person skilled in the art could have easily implemented the matters specifying the Invention according to the above different feature by adopting 1-methyl-2(3-pyridyl)tetrahydropyrrole (nicotine) obtained by the method in the above Technology of Cited Document 2 as the tobacco pyrolysis product contained

in the aerosol forming substrate 14 comprising the support material in the article 10 of the Cited Invention.

Therefore, the Invention could have been easily made by a person skilled in the art based on the Cited Invention and the Technology of Cited Document 2.

In addition, the Invention does not exert any remarkable effects beyond those expected from the Cited Invention and the Technology of Cited Document 2.

No. 5 Closing

As described above, the Invention could have been easily made by a person skilled in the art based on the Cited Invention and the Technology of Cited Document 2, and accordingly, the Appellant should not be granted a patent for the Invention under the provisions of Article 29(2) of the Patent Act.

Thus, the application shall be rejected even without examining the inventions relating to other claims.

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

February 26, 2021

Chief administrative judge: YAMAZAKI, Katsushi
Administrative judge: MATSUSHITA, Akira
Administrative judge: KAWAKAMI, Kei