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(54) **CIGAR WRAPPER AND HEATING-TYPE SMOKING PRODUCT INCLUDING SAME**

(57) The disclosure relates to cigarette paper for a cigar wrapping a smoking article, the cigarette paper including 50 wt% or more of a cigar leaf, in which the smoking article is a heating type smoking article, a smoking

article including the cigarette paper for a cigar, and a manufacturing method thereof. The cigarette paper for a cigar has a tensile strength of 120 cN/mm or more so as to be applicable to a heating type smoking article.

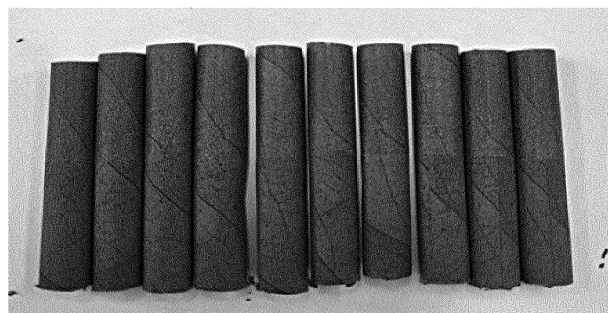


FIG. 1

Description

Technical Field

5 **[0001]** The present disclosure relates to cigarette paper for a cigar, a heating type smoking article including the same, and a method of manufacturing the same.

Background Art

10 **[0002]** There is an increasing interest in a heating type smoking article including a tobacco rod that is formed by filling the inside of cigarette paper with a tobacco filler including a tobacco raw material and an aerosol generating substrate. The heating type smoking article described above is a type of smoking article for heating the tobacco raw material by an electric heater in a heating device without burning it and delivering an aerosol generated from the tobacco filler to a user. As the electric heater, heaters with various shapes such as shapes of a blade, rod, and the like have been put into
15 practical use, and the tobacco rod is mounted on the heating device by inserting the tobacco rod into the electric heater from a tip end surface of the tobacco rod during the use.

[0003] A cigar is a smoking article made by rolling a tobacco leaf and contains the tobacco leaf as a material for wrapping the tobacco raw material. The cigar-related smoking articles are steadily consumed by consumers who prefer the unique taste of cigars, and since cigars are smoked for a long time, cigars having a thin shape such as cigarillos
20 have also been proposed.

[0004] As described above, there has been a steady preference for the smoking article including cigarette paper to which a cigar leaf is applied, but there is a limitation in that a tensile strength of cigarette paper for a cigar of the related art is insufficient to be applied to heating type smoking articles that are currently mainly consumed.

25 Prior Art Documents

Patent Document

30 **[0005]** Korean Laid-open Patent Publication No. 2021-0115609

Disclosure of the Invention

Technical Goals

35 **[0006]** The present disclosure provides cigarette paper for a cigar applicable to a heating type smoking article, and a heating type smoking article including the same.

[0007] However, aspects to be achieved in the present disclosure are not limited to the above-described aspects, and other aspects not mentioned herein may be clearly understood by a person having ordinary skill in the art to which the present disclosure pertains from the following description.

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Technical Solutions

[0008] The present disclosure provides cigarette paper for a cigar wrapping a smoking article, in which the cigarette paper for a cigar includes 50 wt% or more of a cigar leaf, and the smoking article is a heating type smoking article.

45 **[0009]** According to an embodiment of the present disclosure, the cigarette paper for a cigar may have a tensile strength of 120 cN/mm or more.

[0010] According to another embodiment of the present disclosure, the cigar leaf may include a cigar leaf stem and may not include a cigar leaf ligule.

[0011] According to still another embodiment of the present disclosure, the cigarette paper for a cigar may further include pulp.
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[0012] According to still another embodiment of the present disclosure, the pulp may include one or more of hard pulp and soft pulp.

[0013] According to still another embodiment of the present disclosure, the pulp may be a mixture of hard pulp and soft pulp at a weight ratio of 0.1 - 99.9:99.9 - 0.1.

55 **[0014]** In addition, the present disclosure provides a method of manufacturing cigarette paper for a cigar wrapping a smoking article, the method including: beating a cigar leaf (S1); beating pulp (S2); mixing the cigar leaf and pulp beaten in steps S1 and S2 (S3); and performing papermaking of the mixed cigar leaf and pulp (S4), in which the smoking article is a heating type smoking article.

[0015] According to still another embodiment of the present disclosure, the cigarette paper for a cigar may include 50 wt% or more of the cigar leaf.

[0016] According to still another embodiment of the present disclosure, the papermaking in step S4 may be performed by using a Fourdrinier paper machine or cylinder paper machine.

5 **[0017]** In addition, the present disclosure provides a heating type smoking article including the cigarette paper for a cigar manufactured by the method described above.

Effects

10 **[0018]** The present disclosure provides a cigar leaf-containing cigarette paper for a cigar that may be used in a heating type smoking article. The cigarette paper for a cigar has an excellent tensile strength, while it includes the cigar leaf, and thus, the cigarette paper for a cigar is applicable to the heating type smoking article. Since the cigarette paper for a cigar includes the cigar leaf, the smoke flavor is enhanced, the tobacco flavor is increased, and the appearance thereof is also differentiated.

15 **[0019]** It should be understood that the effects of the present disclosure are not limited to the above-described effects, but are construed as including all effects that can be inferred from the configurations and features described in the following description or claims of the present disclosure.

Brief Description of Drawings

20 **[0020]**

FIG. 1 is a diagram illustrating an image obtained by capturing cigarette paper for a cigar according to an embodiment of the present disclosure.

25 FIG. 2 is a diagram illustrating a result of a sensory evaluation of cigarette paper for a cigar according to an embodiment of the present disclosure.

Best Mode for Carrying Out the Invention

30 **[0021]** Hereinafter, embodiments of the present disclosure will be described in detail with reference to the accompanying drawings. When it is determined detailed description related to a related known function or configuration they may make the purpose of the present disclosure unnecessarily ambiguous in describing the present disclosure, the detailed description will be omitted here. In addition, terminologies used herein are defined to appropriately describe the embodiments and thus may be changed depending on a user, the intent of an operator, or a custom of a field to which the present disclosure pertains. Accordingly, the terminologies must be defined based on the following overall description of the present specification. In the drawings, like reference numerals are used for like elements.

35 **[0022]** In the whole specification, when a member is positioned "on" another member, this not only includes a case that the any member is brought into contact with the other member, but also includes a case that another member exists between two members.

40 **[0023]** It will be understood that when a certain part "includes" a certain component, the part does not exclude another component but may further include another component.

[0024] Throughout the specification, when a user inhales the external air by using a smoking article, a portion where the air flows to the inside from the outside of the smoking article is referred to as an "upstream" portion and a portion where the air flows out to the outside from the inside of the smoking article is referred to as a "downstream" portion. The terms "upstream" and "downstream" may be used to indicate a relative position or orientation between portions or segments constituting the smoking article.

45 **[0025]** Cigarette paper for a cigar applied to a combustible smoking article had a tensile strength of 80 cN/mm or less, and thus, the wrapper was sometimes damaged when it is applied to a heating type smoking article. In a process of preparing a final wrapper by using the cigar leaf, it was difficult to perform the uniform blending thereof and there was the inconvenience of performing two steps of the process, since it was necessary to prepare reconstituted tobacco in a primary step and then blend it with pulp in a secondary step. Also, when performing the process, components included in the wrapper sometimes leaked, which caused a deterioration in the unique smoke flavor and taste of the cigar.

[0026] Therefore, the inventors has developed cigarette paper for a cigar that enables the smoking by a heating type smoking device while maintaining the unique smoke flavor and taste for consumers and completed the present disclosure.

55 **[0027]** Hereinafter, cigarette paper for a cigar and a smoking article including the cigarette paper for a cigar according to the present disclosure will be described in detail with reference to embodiments and drawings. However, the present disclosure is not limited to the embodiments and drawings.

[0028] The present disclosure provides cigarette paper for a cigar wrapping a smoking article, in which the cigarette

paper for a cigar includes 50 wt% or more of a cigar leaf, and the smoking article is a heating type smoking article.

[0029] According to an embodiment of the present disclosure, the cigarette paper for a cigar may include 50 wt% or more of the cigar leaf. This allows the smoking article of the present disclosure to have the unique flavor and taste of the cigar. When the content of the cigar leaf is less than 50 wt%, the unique taste and flavor of cigar may be insufficient, and a transition amount of nicotine may be insufficient. The content thereof may be more desirably 50 wt% to 66 wt%.

[0030] According to an embodiment of the present disclosure, the cigarette paper for a cigar may have a tensile strength of 120 cN/mm or more. This allows the cigarette paper for a cigar to be applied to the heating type smoking article. Since the cigarette paper for a cigar has the tensile strength of 120 cN/mm or more, the cigarette paper for a cigar does not break during the process, when the cigarette paper for a cigar is applied to the smoking article for the use thereof, and this significantly enhances workability. When the tensile strength is less than 120 cN/mm, the workability may be greatly reduced and the cigarette paper for a cigar may be damaged when it is inserted into a heating type smoking device for the use thereof.

[0031] According to an embodiment of the present disclosure, the cigarette paper for a cigar has a basis weight of 40 to 80 g/m². When the cigarette paper for a cigar has the basis weight of less than 40 g/m², an effect of supporting other materials of the smoking article and maintaining a shape thereof may be insufficient. When the basis weight thereof exceeds 80 g/m², the process may not smoothly proceed due to poor adhesiveness according to an increase in paper elasticity at the time of preparing the smoking article, and this may deteriorate the workability.

[0032] According to an embodiment of the present disclosure, the cigarette paper for a cigar has a thickness of 50 to 180 μm. When the cigarette paper for a cigar has the thickness of less than 50 μm, the effect of supporting other materials of the smoking article and maintaining the shape thereof may be insufficient. When the thickness thereof exceeds 180 μm, the process may not smoothly proceed due to poor adhesiveness according to an increase in paper elasticity at the time of preparing the smoking article, and this may deteriorate the workability.

[0033] According to an embodiment of the present disclosure, the cigarette paper for a cigar has an elongation of 0.5% to 3%. When the cigarette paper for a cigar has an elongation of less than 0.5%, the cigarette paper for a cigar may be broken at the time of preparing the smoking article, which may deteriorate the workability. When the elongation thereof exceeds 3%, the effect of supporting other materials of the smoking article and maintaining the shape thereof may be reduced due to the excessive elongation.

[0034] According to an embodiment of the present disclosure, the cigarette paper for a cigar has a porosity of 20 to 80 Coresta Unit (CU). The porosity, expressed in Coresta Unit (CU), is a value representing a volumetric flow rate of air passing through a sample of 1 cm² under a pressure of 1 kilopascal (kPa) (cm³/cm².min at 1 kPa). When the cigarette paper for a cigar has a porosity of less than 20 CU (cm³/cm².min at 1 kPa), external air may not be smoothly introduced when using the smoking article, which may affect a sucking property at the time of the smoking. When the porosity thereof exceeds 80 CU (cm³/cm².min at 1 kPa), the external air may be excessively introduced due to the excessive porosity, which may deteriorate the sucking property (smoking quality) of the smoking article to cause wasted sucking. More desirably, when the cigarette paper for a cigar according to the present disclosure has a porosity of 50 CU to 80 CU, an excellent flavor is obtained when using the smoking article.

[0035] According to an embodiment of the present disclosure, the cigarette paper for a cigar has smoothness (SS) of 5 to 15 and smoothness (RS) of 5 to 15. Regarding the surface smoothness (SS), when the cigarette paper for a cigar has smoothness of less than 5 the workability may be deteriorated. When the smoothness exceeds 15, the preference may be lowered due to a lack of unique sensibility of the cigar leaf. Regarding the rear smoothness (RS), when the cigarette paper for a cigar has smoothness of less than 5, application of an adhesive may be insufficient at the time of preparing the smoking article, which may cause a burst of an adhesive portion. When the smoothness exceeds 15, the uniformity may be deteriorated when packaging a cut due to a slip (sliding).

[0036] The smoothness is a value measured according to the Bekk method. The Bekk method is a method of measuring an air flow between paper and an ideal plane. A larger time unit (sec) indicates that it is smooth. The cigarette paper for a cigar has lower smoothness than the normal paper, as it includes the cigar leaf, unlike ordinary paper. However, when the cigarette paper for a cigar has smoothness of less than 5, the paper jam may occur at the time of preparing the smoking article, which may deteriorate the workability. When the smoothness thereof exceeds 15, the preference may be lowered due to a lack of unique sensibility of the cigar leaf.

[0037] According to an embodiment of the present disclosure, the cigarette paper for a cigar is prepared by mixing a pulp component and a cigar leaf. The pulp component of the cigarette paper for a cigar may include one or more of hard pulp (hardwood pulp) and soft pulp (softwood pulp). The pulp may include only one of hard pulp or soft pulp, or may be a mixture of the hard pulp and soft pulp at a weight ratio of 0.1 - 99.9:99.9 - 0.1 and desirably at a weight ratio of 20 - 80:80 - 20. In the desirable blending range described above, a tensile strength suitable for the use in the heating type smoking article may be exhibited. As a large amount of hard pulp is included, the tensile strength increases, but the elongation and the amount of cigar leaf falling may increase. On the other hand, as a large amount of soft pulp is included, the elongation and the amount of cigar leaf falling are reduced, but the tensile strength may decrease. Therefore, it is necessary to perform the blending appropriately.

[0038] For the cigar leaf used for the wrapper, the cigar leaf stem and a cigar leaf ligule is not substantially included. The cigar leaf stem is included in an amount of 90 wt% with respect to 100 wt% of a total of the cigar leaf used, and a content of the cigar leaf ligule is less than 1 wt%, which is substantially not included.

[0039] According to an embodiment of the present disclosure, the cigarette paper for a cigar may include a stem-shaped print similar to a cigar. Any printing method may be applied without limitation, as long as it is a printing method applied to the smoking article.

[0040] According to another embodiment of the present disclosure, there is provided a method of manufacturing cigarette paper for a cigar wrapping a smoking article, the method including: beating a cigar leaf (S1); beating pulp (S2); mixing the cigar leaf and pulp beaten in steps S1 and S2 (S3); and performing papermaking of the mixed cigar leaf and pulp (S4), in which the smoking article is a heating type smoking article.

[0041] According to still another embodiment of the present disclosure, steps S1 and S2 described above may be performed independently. In the present disclosure, steps S1 and S2 are independently performed and then the cigar leaf and pulp beaten independently in each step are mixed in step S3. Therefore, it is advantageous that the uniform blending may be performed. Since the process is performed in a simple manner, working convenience increases and working time is reduced.

[0042] In addition, the amount of elution of nicotine in the cigar leaf may be reduced according to the independent beating process, which may cause an increase in the transition amount of nicotine of the smoking article.

[0043] The manufacturing method of the present disclosure may be performed by applying a typical papermaking process. In general, the papermaking process may be performed in the order of a pulp preparation process, a composition process, a papermaking process, a processing process, and a finishing process.

[0044] The pulp preparation process is a process of separating and extracting fibers from wood or other fiber plants by a mechanical or chemical treatment. The composition process, as a process of preparing materials required for the papermaking process, is a process of dissociating, beating, and screening the materials and performing a chemical treatment on some of materials so that the materials may be used in the papermaking process.

[0045] Such pulp is obtained as a paper material by cutting raw wood into a predetermined size, putting it into a barker to peel off the outer bark, putting it into a grinder with water and grinding it, and then screening impurities.

[0046] The papermaking process is a process of papermaking the paper material screened in the composition process. To briefly describe the papermaking process, the papermaking process includes an operation of forming a sheet by uniformly injecting and distributing the paper material, an operation of mechanically compressing and dehydrating the paper material in the form of a sheet as it passes through a press roll, an operation of drying the paper material in the form of a sheet using steam, and an operation of adjusting a thickness of paper or flattening a surface thereof through a roll. The process may be connected to the processing process as a continuous process or using a separate processing machine. The paper material may be rolled after the drying or calendering, without the processing process.

[0047] At this time, the papermaking process may be divided into Fourdrinier papermaking and cylinder papermaking. In a process of forming a paper layer, a machine in which a wire portion is formed of an endless long mesh is referred to as the Fourdrinier paper machine and a machine in which a wire portion is formed of a cylinder is referred to as the cylinder paper machine.

[0048] Accordingly, according to another embodiment of the present disclosure, the papermaking in step S4 may be performed by using the Fourdrinier paper machine or cylinder paper machine. Both the cylinder and Fourdrinier paper machine may be used, and it is desirable to use the cylinder paper machine to increase the amount of sheets formed for the wrapper.

[0049] According to another embodiment of the present disclosure, the method may further include calendering of the cigarette paper for a cigar (SS) after completing the papermaking in step S4. The calendering is performed through an offline or online method, and through this process, printability may be increased and the tensile strength may be improved.

[0050] According to another embodiment of the present disclosure, the method may further include performing stem-shaped printing (S6) after step S5. Any printing method may be applied without limitation, as long as it is a printing method applied to the smoking article.

[0051] The present disclosure may provide a smoking article including the cigarette paper for a cigar.

[0052] According to another embodiment of the present disclosure, there is provided a smoking article including a smoking material portion, a cooling portion positioned downstream of the smoking material portion, a filter portion positioned downstream of the cooling portion, and cigarette paper for a cigar wrapping the smoking article. The "smoking article" herein refers to any product that may be used for smoking or any product capable of providing a smoking experience. Particularly, in the present disclosure, the smoking article may refer to a smokable product capable of generating an aerosol such as a heating type electronic cigarette.

[0053] According to another embodiment of the present disclosure, the smoking material portion, the cooling portion positioned downstream of the smoking material portion, and the filter portion positioned downstream of the cooling portion may be connected in a longitudinal direction. That is, the filter portion may be positioned at a most downstream side of the smoking material portion, that is, in a direction (a downstream direction) closest to a smoker, and the smoking material

portion may be positioned on a most upstream side, that is, a direction (an upstream direction) farthest from the smoker.

[0054] According to another embodiment of the present disclosure, the smoking material portion includes an aerosol generating material. The aerosol generating material refers to a material capable of generating an aerosol and may be in a solid or liquid state.

[0055] For example, a solid aerosol generating material may include a solid substance based on tobacco raw materials such as plate-shaped leaf tobacco, cuts, or reconstituted tobacco, and particularly, the smoking material portion according to the present disclosure may include the cigar leaf as the solid substance.

[0056] A liquid aerosol generating material may include a liquid composition based on nicotine, tobacco extracts, and/or various flavoring agents. However, the scope of the present disclosure is not limited to the examples listed above.

[0057] The liquid aerosol generating material may include, as more specific examples, at least one of propylene glycol (PG) or glycerin (GLY) and may further include at least one of ethylene glycol, dipropylene glycol, diethylene glycol, triethylene glycol, tetraethylene glycol, or oleyl alcohol. In another example, the aerosol generating material may further include at least one of nicotine, moisture, or a flavoring material. In still another example, the aerosol generating material may further include various additives such as cinnamon, capsaicin, or the like. The aerosol generating material may contain, not only a liquid material having a high fluidity, but a material in the form of gel or solid. As described above, composition components of the aerosol generating material may be variously selected according to the embodiments and a composition ratio thereof may also vary according to the embodiments. Hereinafter, the liquid may refer to a liquid aerosol generating material.

[0058] According to another embodiment of the present disclosure, the smoking material portion may include the solid aerosol generating material or may include both the solid aerosol generating material and the liquid aerosol generating material. A length of the smoking material portion may be approximately 15 mm to 75 mm.

[0059] According to another embodiment of the present disclosure, the smoking article includes a filter portion. For example, the filter portion may be a mono filter, double filter, or triple filter. In addition, the filter portion may include at least one of filters having a porous matrix structure, tube structure, and paper tube structure. The filter may include a fibrous or filamentous filter tow containing at least one of a polymer, paper, cellulose acetate, activated carbon, and carbon, or a filter tow containing both. However, the embodiment is not limited thereto. In some embodiments, the material of the filter may further include at least one filter material widely known in the technical field, such as a carbon-containing adsorbent or activated carbon. Also, the filter portion may further include tip paper and/or filter wrapping paper for wrapping the filter and the tip paper and the filter wrapping paper may be, for example, a paper material, but are not limited thereto.

[0060] The filter portion may be manufactured to generate flavors. In an example, a flavoring liquid may be sprayed onto the filter portion or separate fibers coated with the flavoring liquid may be inserted into the filter portion.

[0061] In addition, the filter portion may include at least one capsule. The capsule may perform a function of generating a flavor or a function of generating an aerosol. For example, the capsule may have a structure in which a liquid containing a fragrance is coated with a film. The capsule may have a spherical or cylindrical shape, but is not limited thereto.

[0062] In addition, the cooling portion may be made of a polymer material or biodegradable polymer material. For example, the cooling portion may be made of only pure polylactic acid, but is not limited thereto. Alternatively, the cooling portion may be made of a cellulose acetate filter having a plurality of holes. However, the cooling portion is not limited to the above example, and may be applicable without limitation as long as it may perform a function of cooling the aerosol.

[0063] The smoking article according to the present disclosure may further include a front end filter. The front end filter is positioned on a side opposite to the filter portion in the smoking article. The front end filter may prevent the smoking material portion of the smoking article from escaping to the outside and prevent the liquefied aerosol from flowing into the heating type smoking device from the smoking article during the smoking.

[0064] In addition, the heating type smoking device to which the smoking article according to some embodiments of the present disclosure is applicable will be briefly described.

[0065] The heating type smoking device may include a housing, a heater, a controller, and a battery. However, the components described above are merely an example and it is apparent to those skilled in the art, to which the present disclosure belongs, that other generally used components may be further included in addition to the components. For example, the heating type smoking device may further include an output module (e.g., a motor or display) for outputting a state of a device and/or an input module (e.g., a button) for receiving an input of a user (e.g., on/off of the device). Hereinafter, each of the components of the heating type smoking device will be described.

[0066] The housing may form the exterior of the heating type smoking device. The housing may also form an accommodating space for accommodating a smoking article. The smoking article accommodated in the accommodating space may generate smoke and/or an aerosol as it is heated by the heater, and the generated smoke and/or aerosol may be inhaled through a user's mouth. The smoking article herein may correspond to the smoking article according to some embodiments of the present disclosure described above.

[0067] Next, the heater may generate smoke and/or an aerosol by heating the smoking article accommodated in the accommodating space. The heater may be an internal heating type heater for heating the inside of the accommodated

heating article or an external heating type heater for heating the outside of the smoking article. In addition, the heater may be implemented as an electric resistive heater or as an induction heating type heater. As described above, the heater may be implemented in any manner as long as it may generate smoke and/or an aerosol by heating the smoking article.

[0068] Next, the controller may control an overall operation of the heating type smoking device. For example, the controller may control operations of the heater and battery and may also control operations of other components included in the heating type smoking device. The controller may control power supplied by the battery, a heating temperature of the heater, and the like. In addition, the controller may verify a state of each of the components of the heating type smoking device to determine whether the heating type smoking device is in an operable state.

[0069] The controller may be implemented by at least one processor. The processor may be implemented as an array of a plurality of logic gates, or may be implemented as a combination of a general-purpose microprocessor and a memory in which a program executable by the microprocessor is stored. In addition, it may be understood by those having ordinary skill in the art to which the present disclosure pertains that it may be implemented in other types of hardware.

[0070] Next, the battery may supply power used for the operation of the heating type smoking device. For example, the battery may supply power to the heater and may supply power required for the operation of the controller.

[0071] In addition, the battery may supply power required for operations of additional electric components such as a display, a sensor, a motor, or the like installed in the heating type smoking device.

[0072] Also, particularly, the smoking article according to the present disclosure may be used in a hybrid heating type smoking device in which a liquid aerosol forming substrate is also used. The hybrid heating type smoking device may be a device in which a vaporizer and a smoking article are arranged in parallel or a device in which a vaporizer and a smoking article are arranged in series. However, the scope of the present disclosure is not limited to these examples, and the arrangement inside the heating type smoking device may be changed.

[0073] As described above, the heating type smoking device may further include a vaporizer. However, this is a preferable embodiment to achieve the object of the present disclosure, and thus other components may be added or some of the components may be omitted as needed.

[0074] The vaporizer may generate an aerosol by vaporizing a liquid aerosol forming substrate. For example, the vaporizer may be configured to include a liquid storage tank for storing the liquid aerosol forming substrate, a wick for absorbing the stored liquid, and a liquid vaporization element for vaporizing the absorbed liquid. At this time, the liquid vaporization element may be implemented as a heating element, may be implemented as a vibration element that for vaporizing the liquid through ultrasonic vibration, or may be implemented in other forms. In addition, the scope of the present disclosure is not limited to these examples, and the vaporizer may be implemented in other forms. For example, the vaporizer may be implemented to have a structure that does not include a wick.

[0075] An aerosol generated from the vaporizer may pass through the smoking article to be inhaled through the user's mouth. The liquid vaporization element of the vaporizer may be controlled by the controller.

[0076] Hereinafter, the configuration of the present disclosure and effects thereof will be described in more detail through examples and comparative examples. However, the examples are merely intended for the purpose of describing the disclosure in more detail, and thus, the scope of the disclosure is not limited to the examples.

[Examples]

Example 1

[0077] A cigar leaf (51 wt%) and mixed pulp (soft and hard) (49 wt%) were prepared, beaten, and mixed. The mixed pulp includes soft pulp and hard pulp at a weight ratio of 20:80, and the cigar leaf does not contain a leaf ligule.

[0078] The papermaking of the mixture was performed by using the cylinder paper machine capable of implementing a high tensile strength, compared to the Fourdrinier paper machine, thereby preparing cigarette paper for a cigar. The prepared cigarette paper for a cigar was subjected to the calendering, and then, a cigar leaf pattern was printed.

Comparative Example 1

[0079] For comparison, a cigar leaf (10 wt%) and mixed pulp (90 wt%) were pulverized, mixed, beaten, and mixed. The papermaking of the mixture was performed using the Fourdrinier paper machine, thereby preparing cigarette paper for a cigar. The prepared wrapper was subjected to the calendering, and then, a cigar leaf pattern was printed.

[0080] The components of the prepared cigarette paper for a cigar were confirmed and shown in Table 1 below.

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[Table 1]

Classification	Unit	Example 1	Comparative Example 1
Nicotine	%	0.4	0.05
Sugar	%	0.8	0.12

<Confirmation of Physical Properties of Cigarette Paper for Cigar>

[0081] Physical properties of the prepared final wrapper were confirmed and shown in Table 2 below. A tensile strength and elongation below were analyzed by using a tensile testing machine (AG-5000G, Universal Testing Machine) based on ASTM D638. A speed of a crosshead was 0.3 mm/min and a load thereof was 50 kg.

Table 2]

Classification	Unit	Example 1	Comparative Example 1
Weight	g/m ²	50	50
Thickness	μm	90	90
Tensile strength (MD)	cN/mm	128	84
Elongation	%	1.0	0.7
Porosity	CU	50	70
Smoothness	SS	7.5	5.2
	RS	7.3	5.0

[0082] As it may be confirmed in Table 1 above, the tensile strength was increased by 40 cN/mm or more, a suitable porosity of 50 CU was obtained, and the smoothness was increased, compared to a current cigarette paper for a cigar.

[0083] <Evaluation of Manufacturing Workability of Smoking Article to which Cigar Final Wrapper is Applied>

[0084] A heating type smoking article including a medium portion, a cooling portion, and a filter portion was prepared by using the cigar final wrapper of each of Example 1 and Comparative Example. As shown in FIG. 1, the heating type smoking article is completed by winding the cigarette paper for a cigar in a final step. In order to evaluate the workability of the heating type smoking article, an applicable manufacturing speed, an adhesiveness, a cigarette paper breakage, contamination of an adhesive, and a fire extinguishing rate of cigarette paper of each example were evaluated and shown in Table 3.

Table 3]

Cigarette paper	Manufacturing speed (CPM)	Adhesiveness	Cigarette paper breakage	Contamination of adhesive
Example 1	10,000	Good	None	None
Comparative Example 1	7,000	Good	Broken with 7,000 or more	None

[0085] As shown in Table 2 above, when the cigarette paper for a cigar of Example 1 was used, the cigarette paper was not often broken and the manufacturing speed was excellent, compared to the cigarette paper for a cigar of Comparative Example 1.

<Analysis of Smoke Components of Smoking Article to which Cigar Final Wrapper is Applied>

[0086] For the prepared smoking article, 20 smoking articles were used in an automatic smoking device for smoking according to ISO smoking conditions, and contents of nicotine, propylene glycol, glycerin, and water collected in a pad were measured and shown in Table 4 below.

Table 4]

Product name		Nicotine	PG	Gly	Water
Comparative Example 1	Average (mg/stick)	0.40	2.51	11.42	22.4
	Deviation (mg/stick)	0.07	0.28	1.11	1.0
	CV (%)	18.5	11.1	9.7	4.4
Example 1	Average (mg/stick)	0.55	2.37	11.48	23.2
	Deviation (mg/stick)	0.03	0.17	0.61	0.4
	CV (%)	8.6	7.2	5.7	1.6

[0087] From the above results, it may be confirmed that the transition amount of nicotine increases, when the cigarette paper for a cigar of Example 1 is applied.

<Sensory Evaluation of Smoking Article to which Cigar Final Wrapper is applied>

[0088] Through a panel of 20 members, the tastes of the smoking articles prepared with the cigarette paper for a cigar of Example 1 and Comparative Example 1 were evaluated and shown in FIG. 2.

[0089] As it may be confirmed in FIG. 2, it was confirmed that a smoke flavor intensity and stimulating property increased according to an increase in the amount of nicotine, thereby further improving the overall tobacco taste.

[0090] A number of example embodiments have been described above. Nevertheless, it should be understood that various modifications may be made to these example embodiments. For example, suitable results may be achieved if the described techniques are performed in a different order and/or if components in a described system, architecture, device, or circuit are combined in a different manner and/or replaced or supplemented by other components or their equivalents. Therefore, other implementations, other examples, and equivalents to the claims are also within the scope of the following claims.

Claims

1. Cigarette paper for a cigar wrapping a smoking article, the cigarette paper comprising:

50 wt% or more of a cigar leaf,
wherein the smoking article is a heating type smoking article.

2. The cigarette paper of claim 1, wherein the cigarette paper has a tensile strength of 120 cN/mm or more.

3. The cigarette paper of claim 1, wherein the cigar leaf comprises a cigar leaf stem and does not comprise a cigar leaf ligule.

4. The cigarette paper of claim 1, further comprising:
pulp.

5. The cigarette paper of claim 4, wherein the pulp comprises one or more of hard pulp and soft pulp.

6. The cigarette paper of claim 5, wherein the pulp is a mixture of hard pulp and soft pulp at a weight ratio of 0.1 - 99.9:99.9 - 0.1.

7. A method of manufacturing cigarette paper for a cigar wrapping a smoking article, the method comprising:

beating a cigar leaf (S1);

beating pulp (S2);

mixing the cigar leaf and pulp beaten in steps S1 and S2 (S3); and

performing papermaking of the mixed cigar leaf and pulp (S4),

wherein the smoking article is a heating type smoking article.

8. The method of claim 7, wherein the cigarette paper comprises 50 wt% or more of a cigar leaf.
9. The method of claim 7, wherein the papermaking in step S4 is performed by using a Fourdrinier paper machine or cylinder paper machine.
10. The method of claim 7, wherein the cigar leaf comprises a cigar leaf stem and does not comprise a cigar leaf ligule.
11. The method of claim 7, wherein the pulp comprises one or more of hard pulp and soft pulp.
12. The method of claim 11, wherein the pulp is a mixture of hard pulp and soft pulp at a weight ratio of 0.1 - 99.9:99.9 - 0.1.
13. A heating type smoking article comprising:
the cigarette paper manufactured by the method of claim 7.

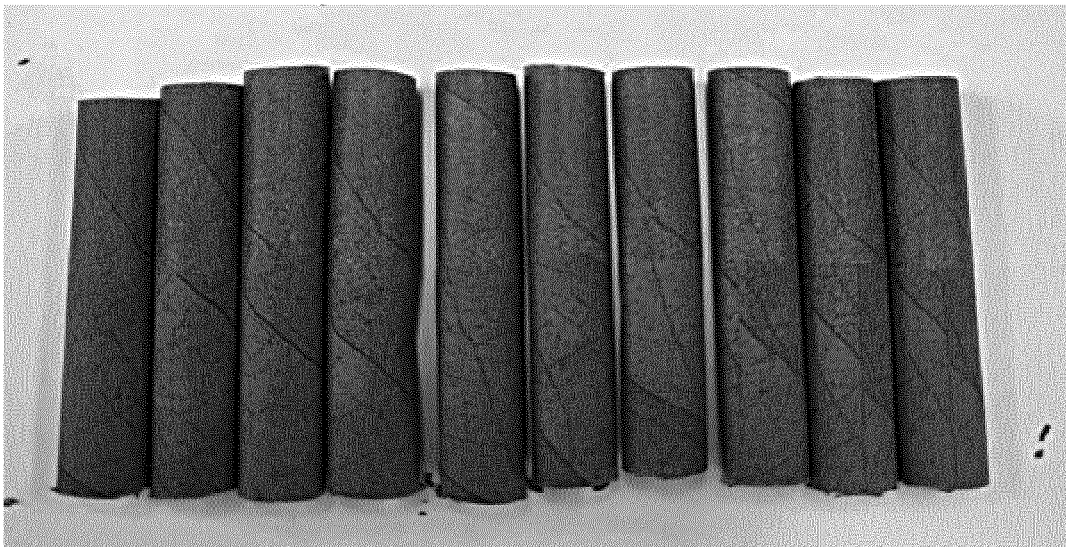


FIG. 1

Result of sensory evaluation of dedicated stick to which
final cigarette paper for P2 cigar is applied(n=15)

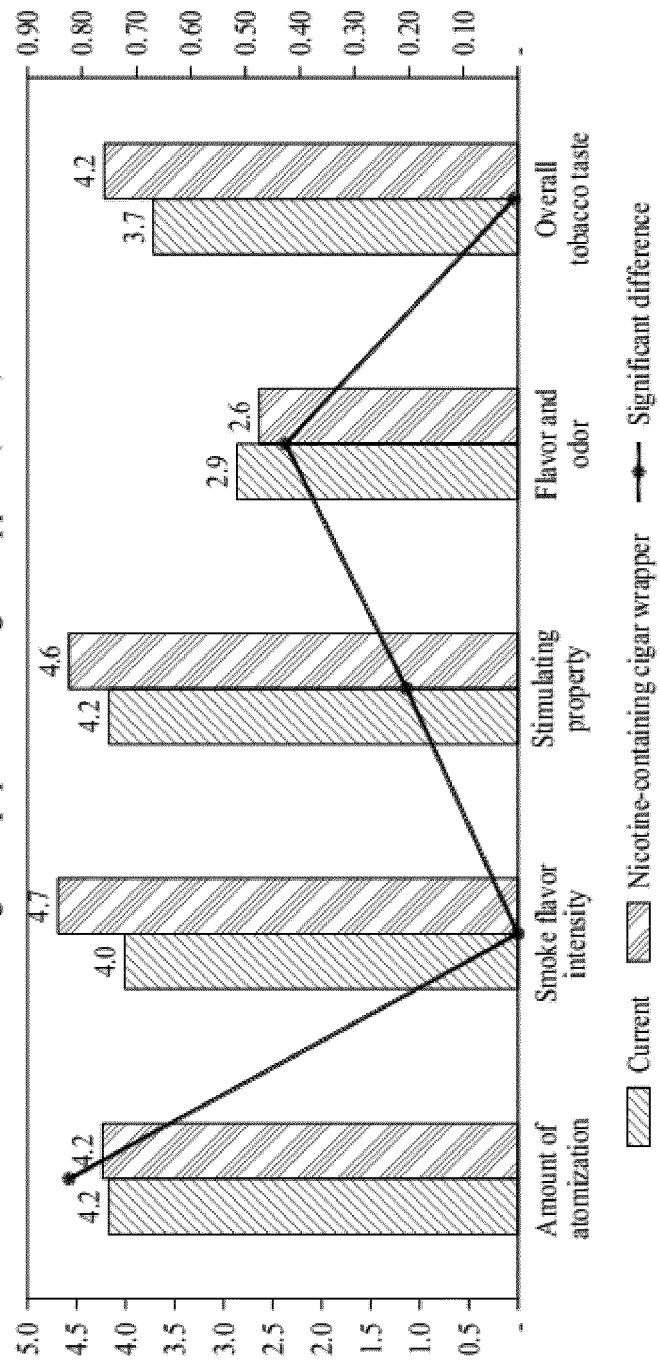


FIG. 2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2022/020423

A. CLASSIFICATION OF SUBJECT MATTER

A24D 1/02(2006.01)i; A24D 1/20(2020.01)i; D21D 1/00(2006.01)i; D21F 11/00(2006.01)i; D21F 9/02(2006.01)i;
D21F 9/04(2006.01)i; D21H 27/00(2006.01)i; D21H 11/12(2006.01)i; A24F 40/20(2020.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A24D 1/02(2006.01); A24B 13/00(2006.01); A24B 3/14(2006.01); A24C 5/00(2006.01); A24D 1/00(2006.01);
A24D 1/20(2020.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models: IPC as above

Japanese utility models and applications for utility models: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS (KIPO internal) & keywords: 시가엽(cigar leaf), 인장강도(tensile strength), 펄프(pulp), 주맥(stem), 엽설(ligule),
초지기(paper machine)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2020-246036 A1 (JAPAN TOBACCO INC.) 10 December 2020 (2020-12-10) See claims 1, 6 and 7; paragraphs [0008]-[0010], [0018]-[0023], [0027] and [0031]- [0037]; and figure 1.	1-13
A	JP 2009-504166 A (CHINA TOBACCO HUMAN INDUSTRIAL CORPORATION) 05 February 2009 (2009-02-05) See claims 1 and 2; and paragraph [0026].	1-13
A	KR 10-2021-0137834 A (KT & G CORPORATION) 18 November 2021 (2021-11-18) See paragraphs [0029]-[0031].	1-13
A	KR 10-2021-0115609 A (KT & G CORPORATION) 27 September 2021 (2021-09-27) See claims 1 and 5.	1-13

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:	“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
“A” document defining the general state of the art which is not considered to be of particular relevance	“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
“D” document cited by the applicant in the international application	“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
“E” earlier application or patent but published on or after the international filing date	“&” document member of the same patent family
“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	
“O” document referring to an oral disclosure, use, exhibition or other means	
“P” document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 16 March 2023	Date of mailing of the international search report 17 March 2023
Name and mailing address of the ISA/KR Korean Intellectual Property Office Government Complex-Daejeon Building 4, 189 Cheongsaro, Seo-gu, Daejeon 35208 Facsimile No. +82-42-481-8578	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2022/020423

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2009-504165 A (CHINA TOBACCO HUMAN INDUSTRIAL CORPORATION) 05 February 2009 (2009-02-05) See claims 1 and 4.	1-13

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2022/020423

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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