

Method for Processing Heat-not-burn Cigarettes

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to Chinese Patent Application No. 2017104626338, filed on June 19, 2017 with the State Intellectual Property Office (SIPO) of the People's Republic of China and entitled "Method for Processing Heat-not-burn Cigarettes", the contents of which are herein incorporated by reference in their entirety.

Technical Field

The present disclosure relates to the technical field of processing of heat-not-burn cigarettes, and particularly to a method for processing heat-not-burn cigarettes.

Background Art

For traditional cigarettes, dozens of cancerogenic substances exist in the smoke produced by tobacco burning. Relevant researches showed that the generation of various chemical substances in the smoke is closely related to the burning temperature of cigarettes, and the hazard index of cigarettes is increased along with the increase of the burning temperature of cigarettes. Moreover, the smoke lingers in the air to form second-hand smoke. Heat-not-burn cigarettes, belonging to a novel cigarette system, produce smoke by low-temperature baking of solid smoke generating substances such as tobacco shreds at 200-400°, without burning the tobacco shreds. Since the baking temperature is lower than the burning temperature, the generation of harmful substances can be greatly reduced. In the international environment and background of smoking prohibition and control, the heat-not-burn cigarette is of great significance.

In the publicly known traditional cigarettes, cigarettes are burned to be smoked. For heat-not-burn cigarettes, the baking temperature thereof is relatively low, active ingredients in the tobacco shreds are difficult to volatilize, and the volatilized active ingredients can be easily re-adsorbed by the tobacco shreds, resulting in poor smoking quality and small smoke volume.

Disclosure of the Invention

Tobacco shreds are composed of leaf shreds, stem shreds, expanded tobacco shreds, etc. The present inventors found that it is because the tobacco shreds do not have the same length and are arranged in a disorderly fashion and not regularly that the active ingredients in the tobacco shreds are difficult to volatilize. In view of this, a method for processing heat-not-burn cigarettes provided by the present disclosure better overcomes the above problems and defects existing in the prior art. By orderly arranging the tobacco shreds,

orderly-arranged gaps are formed between the tobacco shreds, which greatly improves the porosity, as compared with disorderly-arranged tobacco shreds, and ensures good air permeability and airflow uniformity inside the cigarettes; and the orderly-arranged tobacco shreds and the orderly-arranged gaps formed thereby provide approximately straight airflow passages for smoke circulation, which reduces the smoking resistance and the smoke adsorption property of the tobacco shreds, and improves the smoke passing efficiency.

A method for processing heat-not-burn cigarettes, comprising:

cutting flaky reconstituted tobacco leaves in a single direction into a plurality of elongated tobacco shreds; and

making the plurality of elongated tobacco shreds stay close to each other by pressing in a width direction of the elongated tobacco shreds and then wrapping the same with tipping paper to form a cylindrical tobacco rod, wherein the plurality of elongated tobacco shreds in the tobacco rod are regularly and orderly arranged.

Further, the reconstituted tobacco leaves are one of papermaking-process reconstituted tobacco leaves, dry-process reconstituted tobacco leaves, slurry-process reconstituted tobacco leaves and rolling-process reconstituted tobacco leaves.

Further, the length of the reconstituted tobacco leaves is not less than 10.0 mm, and the width of the reconstituted tobacco leaves is not less than 20.0 mm.

Further, the absolute-dry quantitative index of the reconstituted tobacco leaves is 20-110 g/m², and the thickness of the reconstituted tobacco leaves is 0.05-0.60 mm.

Further, the length of each of the elongated tobacco shreds is not less than 10.0 mm, and the width of each of the elongated tobacco shreds is 0.5-3.0 mm.

Further, the plurality of elongated tobacco shreds are made to stay close to each other by pressing in a width direction of the elongated tobacco shreds by using a cigarette rolling machine or a filter rod making machine.

Further, the surface of the tipping paper is coated with a flame retardant.

Further, the flame retardant is one of magnesium hydroxide and aluminum hydroxide or a mixture of them.

Further, the surface of the tipping paper is coated with an atomizing agent.

Further, the atomizing agent is one of propylene glycol, glycerol, propylene glycol acetate and glycerol acetate or a mixture of several of them.

Compared with the prior art, the method for processing heat-not-burn cigarettes of the present disclosure has the following beneficial effects:

For the method for processing heat-not-burn cigarettes of the present disclosure, by cutting reconstituted tobacco leaves in a single direction into a plurality of elongated tobacco shreds, and then making the plurality of elongated tobacco shreds tight (stay close to each other) by pressing, using devices such as a cigarette rolling machine or a filter rod making machine, etc., in the width direction of the elongated tobacco shreds to form tobacco shred rods in which the tobacco shreds are arranged in an orderly fashion, and wrapping the tobacco shred rods with tipping paper to form cylindrical tobacco rods in which the tobacco shreds are arranged in an orderly fashion, orderly-arranged gaps are formed between the tobacco shreds, which greatly improves the porosity, as compared with disorderly-arranged tobacco shreds, and ensures good air permeability and airflow uniformity inside the cigarettes; at the time of smoking a cigarette, a large volume of air can go through the tipping paper from outside the cigarette and go into the inside of the cigarette, providing air support for the generation of smoke; what's more, in the longitudinal direction of the cigarette, the orderly-arranged tobacco shreds and the orderly-arranged gaps formed therebetween provide approximately straight airflow passages for smoke circulation, which reduces the smoking resistance and the smoke adsorption property of the tobacco shreds, and improves the smoke passing efficiency, thereby improving the smoking quality and effectively solving the technical problem that the low-temperature cigarettes have a small smoke volume and poor smoking quality.

In order to make it easier to understand the objects, features and advantages of the present disclosure, detailed description is made below in connection with preferred examples.

Detailed Description of Embodiments

In order to facilitate understanding the present disclosure, the technical solutions of the present disclosure are described below in detail in combination with the examples, and in the following description, numerous specific details are set forth in order to facilitate adequately understanding the present disclosure.

However, the present disclosure can be implemented in many ways other than those described herein, and similar improvements could be made by a person skilled in the art without departing from the spirit of the present disclosure. Thus, the present disclosure is not limited by the following disclosed detail description.

Unless otherwise defined, all of the technical and scientific terms used herein have the same meaning as commonly understood by a person skilled in

the technical field of the present disclosure. When there occurs a contradiction, the definitions in the description prevail.

For the terms as used herein:

The term “comprise”, “include”, “have”, “contain” or any other variant thereof used herein is intended to encompass a non-exclusive inclusion. For example, a composition, step, method, article or device comprising listed elements is not necessarily limited to those elements, but can comprise other elements not explicitly listed, or inherent elements of the composition, step, method, article or device.

The connecting phrase “consist of” excludes any unindicated element, step or ingredient. If the phrase is used in a claim, the phrase makes the claim a closed claim, so that the claim does not contain materials other than those described, except conventional impurities related thereto. When the phrase “consist of” appears in a clause of a claim rather than immediately after the subject matter thereof, the phrase merely defines the elements described in the clause; and other elements are not excluded from the claim as a whole.

When the amount, concentration, or other value or parameter is represented by a range, a preferred range, or a range defined by a series of upper limit preferred values and lower limit preferred values, it should be understood as specifically disclosing all the ranges formed by a pair of any upper limit or preferred value and any lower limit or preferred value, regardless of whether the range is disclosed separately. For example, when the range “1-5” is disclosed, the described range should be interpreted as including the ranges “1-4”, “1-3”, “1-2”, “1-2 and 4-5”, “1-3 and 5”, etc. When a numerical range is described herein, unless otherwise indicated, the range is intended to include the end values and all the integers and fractions within the range.

The term “and/or” is used to indicate that one or both of the illustrated cases may occur, for example, A and/or B include (A and B) and (A or B).

The present disclosure provides a method for processing heat-not-burn cigarettes, comprising:

cutting flaky reconstituted tobacco leaves in a single direction into a plurality of elongated tobacco shreds; and

making the plurality of elongated tobacco shreds stay close to each other by pressing in the width direction of the elongated tobacco shreds and then wrapping the same with tipping paper to form cylindrical tobacco rods, the plurality of elongated tobacco shreds in the tobacco rods being regularly and orderly arranged.

It should be noted that reconstituted tobacco leaves are also called tobacco sheets, reconstituted tobacco, recombined tobacco leaves or homogenized tobacco leaves. They are obtained by subjecting the raw materials of waste

tobacco stems, tobacco leaf shreds, tobacco powder, etc. to the technological processes of extraction, concentration, separation, pulping, grinding, papermaking, drying and flavoring to produce natural tobacco leaves with excellent performance, used as a cigarette filler for cigarette production. The reconstituted tobacco leaves have been subjected to the reconstitution processing, and therefore have good flexibility and tear resistance, are especially suitable for rolling-forming and cannot be damaged easily.

According to the above description, in the present disclosure, by orderly arranging the tobacco shreds, orderly-arranged gaps are formed between the tobacco shreds, which greatly improves the porosity, as compared with disorderly-arranged tobacco shreds, and ensures good air permeability and airflow uniformity inside the cigarettes; at the time of smoking a cigarette, a large volume of air can go through the tipping paper from outside the cigarette and go into the inside of the cigarette, providing air support for the generation of smoke; what's more, in the longitudinal direction of the cigarette, the orderly-arranged tobacco shreds and the orderly-arranged gaps formed therebetween provide approximately straight airflow passages for smoke circulation, which reduces the smoking resistance and the smoke adsorption property of the tobacco shreds, and improves the smoke passing efficiency, thereby improving the smoking quality and effectively solving the technical problem that the low-temperature cigarettes have a small smoke volume and poor smoking quality.

Preferably, the reconstituted tobacco leaves are one of papermaking-process reconstituted tobacco leaves, dry-process reconstituted tobacco leaves, slurry-process reconstituted tobacco leaves and rolling-process reconstituted tobacco leaves.

Preferably, the length of the reconstituted tobacco leaves is not less than 10.0 mm, and the width of the reconstituted tobacco leaves is not less than 20.0 mm.

Preferably, the absolute-dry quantitative index of the reconstituted tobacco leaves is 20-110 g/m², such as 20 g/m², 35 g/m², 50 g/m², 65 g/m², 80 g/m², 95 g/m², 110 g/m², etc.

The thickness of the reconstituted tobacco leaves is 0.05-0.60 mm, such as 0.05 mm, 0.10 mm, 0.15 mm, 0.20 mm, 0.25 mm, 0.30 mm, 0.35 mm, 0.40 mm, 0.45 mm, 0.50 mm, 0.55 mm, 0.60 mm, etc.

Preferably, the length of each of the elongated tobacco shreds is not less than 10.0 mm, and the width of each of the elongated tobacco shreds is 0.5-3.0 mm, such as 0.5 mm, 1.0 mm, 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm, etc.

Preferably, the plurality of elongated tobacco shreds are made to stay close to each other by pressing in the width direction of the elongated tobacco shreds using a cigarette rolling machine or a filter rod making machine.

Preferably, the surface of the tipping paper is coated with a flame retardant.

Preferably, the flame retardant is one of magnesium hydroxide and aluminum hydroxide or a mixture of them.

It should be noted that the surface of the tipping paper is coated with a certain amount of flame retardant so as to prevent burning of the tipping paper and ensure the integrity of the cigarette after being heated for smoking.

Preferably, the surface of the tipping paper is coated with an atomizing agent.

Preferably, the atomizing agent is one of propylene glycol, glycerol, propylene glycol acetate and glycerol acetate or a mixture of several of them.

It should be noted that by coating the surface of the tipping paper with an atomizing agent, the smoke release amount of the reconstituted tobacco leaf product of in the heat-not-burn state is ensured.

In order to facilitate understanding the present disclosure, the technical solutions of the present disclosure are further described below in combination with examples. The applicant declares that the specific technological equipment and technological processes of the present disclosure are described with the following examples, however, the present disclosure is not limited to these specific technological equipment and technological process, i.e., it does not mean that the present invention shall rely on the specific technological equipment and technological process described below in order to be implemented. It should be apparent to a person skilled in the art that any improvement to the present invention, equivalent substitution of each raw material of the product of the present invention, the addition of auxiliary ingredients and the selection of the specific mode, etc. all fall within the protection scope and the disclosure of the present invention.

Example 1

Papermaking-process reconstituted tobacco leaves having an absolute-dry quantitative index of $100.0 \pm 5.0 \text{ g/m}^2$ and a thickness of $0.22 \pm 0.02 \text{ mm}$ were cut, by using a shredding device, in a single direction into a plurality of elongated tobacco shreds, with the width of the elongated tobacco shreds being 0.5 mm. The plurality of elongated tobacco shreds were made to stay close to each other by transversely pressing using a cigarette rolling machine to form tobacco shred rods in which the tobacco shreds were arranged in an orderly fashion and which were then wrapped with tipping paper to form a cylindrical tobacco rod in which the tobacco shreds were arranged in an orderly fashion. The tobacco rod was cut according to a length of 100.0 mm. Each cylindrical tobacco rod having a length of 100.0 mm was further cut according to a length of 10.0 mm, and then each cylindrical tobacco rod having

a length of 10.0 mm was connected to a cigarette filter tip to form a heat-not-burn cigarette, 1# sample.

With the width of the elongated tobacco shreds set to be 0.8 mm, 1.0 mm, 1.2 mm and 1.5 mm respectively, the above technological processes were repeated to obtain 4 heat-not-burn cigarette samples, i.e., 2# sample, 3# sample, 4# sample and 5# sample having different widths of elongated tobacco shreds. In addition, by following the conventional cigarette making technology, papermaking-process reconstituted tobacco leaves were cut into small pieces (generally having a shape of rhombus of 20 mm*30 mm) and further cut into shreds with a width of 1.0 mm, and then rolled using a cigarette making machine into a conventional tobacco rod, in which the tobacco shreds were in an irregularly-ordered state. The tobacco rod was cut according to a length of 10.0 mm and then connected to a cigarette filter tip to form a control sample.

The above 5 samples and control sample were evaluated by being smoked using a smoking set for heat-not-burn cigarettes. The results of sensory quality are as shown in Table 1:

Table 1 Evaluation of Sensory Quality of Papermaking-Process
Heat-not-burn Cigarettes

No.	Gloss	Aroma	Harmony	Offensive odor	Irritation	Aftertaste	Aggregate score	Puff count	Note
Control sample	4.5	26.0	5.0	10.0	17.0	21.0	83.5	2-3 puffs/per cigarette	Smoke volume being relatively small
1#	4.5	27.0	5.0	10.5	17.0	21.0	85.0	7-9 puffs/per cigarette	Smoke volume being slightly small
2#	4.5	28.0	5.0	10.5	17.0	21.0	86.0	7-9 puffs/per cigarette	Smoke volume being relatively large
3#	4.5	28.0	5.0	10.5	17.0	21.0	86.0	7-9 puffs/per cigarette	Smoke volume being relatively large
4#	4.5	28.0	5.0	10.5	17.0	21.0	86.0	7-9 puffs/per cigarette	Smoke volume being relatively large
5#	4.5	27.5	5.0	10.5	17.0	21.0	85.5	7-9	Smoke volume

								puffs/per cigarette	being slightly small
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Example 2

Dry-process reconstituted tobacco leaves having an absolute-dry quantitative index of $95.0 \pm 3.0 \text{ g/m}^2$ and a thickness of $0.25 \pm 0.02 \text{ mm}$ were cut, by a shredding device, in a single direction into a plurality of elongated tobacco shreds, with the width of the elongated tobacco shreds being 0.5 mm. The plurality of elongated tobacco shreds were made to stay close to each other by transversely pressing using a cigarette rolling machine (optionally, a filter rod making machine or other device) to form tobacco shred rods in which the tobacco shreds were arranged in an orderly fashion and which were then wrapped with tipping paper to form a cylindrical tobacco rod in which the tobacco shreds were arranged in an orderly fashion. The tobacco rod was cut according to a length of 120.0 mm. Each cylindrical tobacco rod having a length of 120.0 mm was further cut according to a length of 12.0 mm, and then each cylindrical tobacco rod having a length of 12.0 mm was connected to a cigarette filter tip to form a heat-not-burn cigarette 1# sample.

With the width of the elongated tobacco shreds set to be 0.8 mm, 1.0 mm, 1.2 mm and 1.5 mm respectively, the above technological processes were repeated to obtain 4 heat-not-burn cigarette samples, i.e., 2# sample, 3# sample, 4# sample and 5# sample having different widths of elongated tobacco shreds. In addition, by following the conventional cigarette making technology, dry-process reconstituted tobacco leaves were cut into small pieces (generally having a shape of rhombus of 20 mm*30 mm) and further cut into shreds with a width of 1.0 mm, and then rolled using a cigarette making machine into a conventional tobacco rod, in which the tobacco shreds were in an irregularly-arranged state, and the tobacco rod was cut according to a length of 12.0 mm and then connected to a cigarette filter tip to form a control sample.

The above 5 samples and control sample were evaluated by being smoked using a smoking set for heat-not-burn cigarettes. The evaluation results of sensory quality are as shown in Table 2:

Table 2 Evaluation of Sensory Quality of Heat-not-burn Cigarettes of Dry-process reconstituted tobacco leaves

No.	Gl os s	Arom a	Harm ony	Offen sive odor	Irritat ion	Aftert aste	Aggre gate score	Puff count	Note
Contr ol sampl e	4.5	27.0	5.0	10.0	17.0	22.0	85.5	3-4 puffs/per cigarette	Smoke volume being relatively small

1#	4.5	29.0	5.0	10.5	17.0	22.0	87.0	8-10 puffs/per cigarette	Smoke volume being slightly small
2#	4.5	29.5	5.0	10.5	17.0	22.0	88.0	8-10 puffs/per cigarette	Smoke volume being relatively large
3#	4.5	29.5	5.0	10.5	17.0	22.0	88.0	8-10 puffs/per cigarette	smoke volume being relatively large
4#	4.5	29.5	5.0	10.5	17.0	22.0	88.0	8-10 puffs/per cigarette	Smoke volume being relatively large
5#	4.5	29.0	5.0	10.5	17.0	22.0	87.5	8-10 puffs/per cigarette	Smoke volume being slightly small

Example 3

Slurry-process reconstituted tobacco leaves having an absolute-dry quantitative index of $95.0 \pm 5.0 \text{ g/m}^2$ and a thickness of $0.20 \pm 0.02 \text{ mm}$ were cut, by a shredding device, in a single direction into a plurality of elongated tobacco shreds, with the width of the elongated tobacco shreds being 0.5 mm. The plurality of elongated tobacco shreds were made to stay close to each other by transversely pressing using a cigarette rolling machine (optionally, a filter rod making machine or other device) to form tobacco shred rods in which the tobacco shreds were arranged in an orderly fashion and which were then wrapped with tipping paper to form a cylindrical tobacco rod in which the tobacco shreds were arranged in an orderly fashion. The tobacco rod was cut according to a length of 120.0 mm. Each cylindrical tobacco rod having a length of 120.0 mm was further cut according to a length of 15.0 mm, and then each cylindrical tobacco rod having a length of 15.0 mm was connected to a cigarette filter tip to form a heat-not-burn cigarette 1# sample.

With the width of the elongated tobacco shreds set to be 0.8 mm, 1.0 mm, 1.2 mm and 1.5 mm respectively, the above technological processes were repeated to obtain 4 heat-not-burn cigarette samples, i.e., 2# sample, 3# sample, 4# sample and 5# sample having different widths of elongated tobacco shreds. In addition, by following the conventional cigarette making technology, slurry-process reconstituted tobacco leaves were cut into small pieces (generally having a shape of rhombus of 20 mm*30 mm) and further cut into shreds with a width of 1.0 mm, and then rolled using a cigarette making machine into a conventional tobacco rod, in which the tobacco shreds were in an irregularly-arranged state, and the tobacco rod was cut according to a

length of 15.0 mm and then connected to a cigarette filter tip to form a control sample.

The above 5 samples and control sample were evaluated by being smoked using a smoking set for heat-not-burn cigarettes. The evaluation results of sensory quality are as shown in Table 3:

Table 3 Evaluation of Sensory Quality of Heat-not-burn Cigarettes of Slurry-process reconstituted tobacco leaves

No.	Gloss	Aroma	Harmony	Offensive odor	Irritation	Aftertaste	Aggregate score	Puff count	Note
Control sample	4.5	27.0	5.0	10.0	17.0	22.0	85.5	3-4 puffs/per cigarette	Smoke volume being relatively small
1#	4.5	29.0	5.0	10.5	17.0	22.0	87.0	7-9 puffs/per cigarette	Smoke volume being slightly small
2#	4.5	29.5	5.0	10.5	17.0	22.0	88.0	7-9 puffs/per cigarette	Smoke volume being relatively large
3#	4.5	29.5	5.0	10.5	17.0	22.0	88.0	7-9 puffs/per cigarette	Smoke volume being relatively large
4#	4.5	29.5	5.0	10.5	17.0	22.0	88.0	7-9 puffs/per cigarette	Smoke volume being relatively large
5#	4.5	29.0	5.0	10.5	17.0	22.0	87.5	7-9 puffs/per cigarette	Smoke volume being slightly small

Example 4

Rolling-process reconstituted tobacco leaves having an absolute-dry quantitative index of $100.0 \pm 5.0 \text{ g/m}^2$ and a thickness of $0.20 \pm 0.02 \text{ mm}$ were cut, by a shredding device, in a single direction into a plurality of elongated tobacco shreds, with the width of the elongated tobacco shreds being 0.5 mm. The plurality of elongated tobacco shreds were made to stay close to each other by transversely pressing using a cigarette rolling machine (optionally, a filter rod making machine or other device) to form tobacco shred rods in which the tobacco shreds were arranged in an orderly fashion and which were then wrapped by tipping paper to form a cylindrical tobacco rod in which the tobacco

shreds were arranged in an orderly fashion. The tobacco rod was cut according to a length of 144.0 mm. Each cylindrical tobacco rod having a length of 144.0 mm was further cut according to a length of 12.0 mm, and then each cylindrical tobacco rod having a length of 12.0 mm was connected to a cigarette filter tip to form a heat-not-burn cigarette 1# sample.

With the width of the elongated tobacco shreds set to be 0.8 mm, 1.0 mm, 1.2 mm and 1.5 mm respectively, the above technological processes were repeated to obtain 4 heat-not-burn cigarette samples, i.e., 2# sample, 3# sample, 4# sample and 5# sample having different widths of elongated tobacco shreds. In addition, by following the conventional cigarette making technology, rolling-process reconstituted tobacco leaves were cut into small pieces (generally having a shape of rhombus of 20 mm*30 mm) and further cut into shreds with a width of 1.0 mm, and then rolled using a cigarette making machine into a conventional tobacco rod, in which the tobacco shreds were in an irregularly-arranged state, and the tobacco rod was cut according to a length of 12.0 mm and then connected with a cigarette filter tip to form a control sample.

The above 5 samples and control sample were evaluated by being smoked using a smoking set for heat-not-burn cigarettes. The evaluation results of sensory quality are as shown in Table 4:

Table 4 Evaluation of Sensory Quality of Heat-not-burn Cigarettes of Rolling-process reconstituted tobacco leaves

No.	Gloss	Aroma	Harmony	Offensive odor	Irritation	Aftertaste	Aggregate score	Puff count	Note
Control sample	4.5	26.0	5.0	10.0	17.0	21.0	83.5	2-3 puffs/per cigarette	Smoke volume being relatively small
1#	4.5	27.0	5.0	10.5	17.0	21.0	85.0	7-9 puffs/per cigarette	Smoke volume being slightly small
2#	4.5	28.0	5.0	10.5	17.0	21.0	86.0	7-9 puffs/per cigarette	Smoke volume being relatively large
3#	4.5	28.0	5.0	10.5	17.0	21.0	86.0	7-9 puffs/per cigarette	Smoke volume being relatively large
4#	4.5	28.0	5.0	10.5	17.0	21.0	86.0	7-9 puffs/per	Smoke volume being relatively

								cigarette	large
5#	4.5	27.5	5.0	10.5	17.0	21.0	85.5	7-9 puffs/per cigarette	Smoke volume being slightly small

According to Example 1 to Example 4 described above, compared with the heat-not-burn cigarettes produced by the conventional cigarette making technology, the heat-not-burn cigarettes produced by the processing method of the present disclosure have higher smoke passing efficiency and larger smoke volume, which greatly improves the smoking quality.

The descriptions above are only preferred examples of the present disclosure, which are not used to limit the present disclosure. For a person skilled in the art, the formulation and the preparation processes of the present disclosure may have various changes and variations. Any modifications, equivalent substitutions, improvements etc. within the spirit and principle of the present disclosure shall all be included within the scope of protection of the present disclosure.

Claims:

1. A method for processing heat-not-burn cigarettes, comprising:
 - cutting flaky reconstituted tobacco leaves in a single direction into a plurality of elongated tobacco shreds; and
 - making the plurality of elongated tobacco shreds stay close to each other by pressing in a width direction of the elongated tobacco shreds, and then wrapping the same with tipping paper to form a cylindrical tobacco rod, wherein the plurality of elongated tobacco shreds in the tobacco rod are regularly and orderly arranged,
 - wherein a thickness of the reconstituted tobacco leaves is $0.20\pm0.02\text{mm}$ or $0.22\pm0.02\text{mm}$, and a width of each of the elongated tobacco shreds is 0.5mm, 0.8mm, 1.0mm or 1.2-3.0mm, and
 - a surface of the tipping paper is coated with a flame retardant.
2. The method for processing heat-not-burn cigarettes according to claim 1, characterized in that the reconstituted tobacco leaves are one of papermaking-process reconstituted tobacco leaves, dry-process reconstituted tobacco leaves, slurry-process reconstituted tobacco leaves and rolling-process reconstituted tobacco leaves.
3. The method for processing heat-not-burn cigarettes according to claim 1, characterized in that a length of the reconstituted tobacco leaves is not less than 10.0 mm, and a width of the reconstituted tobacco leaves is not less than 20.0 mm.
4. The method for processing heat-not-burn cigarettes according to claim 1, characterized in that an absolute-dry quantitative index of the reconstituted tobacco leaves is 20-110 g/m².
5. The method for processing heat-not-burn cigarettes according to claim 1, characterized in that a length of each of the elongated tobacco shreds is not less than 10.0 mm.
6. The method for processing heat-not-burn cigarettes according to claim 1, characterized in that a cigarette rolling machine or a filter rod making machine is used to make the plurality of elongated tobacco shreds stay close to each other by pressing in the width direction of the elongated tobacco shreds.
7. The method for processing heat-not-burn cigarettes according to claim 1, characterized in that the flame retardant is one selected from the group consisting of magnesium hydroxide and aluminum hydroxide, or a mixture of two of the group.

8. The method for processing heat-not-burn cigarettes according to claim 1, characterized in that a surface of the tipping paper is coated with an atomizing agent.
9. The method for processing heat-not-burn cigarettes according to claim 8, characterized in that the atomizing agent is one selected from the group consisting of propylene glycol, glycerol, propylene glycol acetate and glycerol acetate, or a mixture of several of the group.