The present application provides an apparatus for manufacturing liquid storage cotton used for an electronic cigarette, which includes a melt-blown device and a melt-blown cotton receiving device configured to receive melted threads blown from the melt-blown device to manufacture columnar liquid storage cotton, and the melt-blown cotton receiving device is provided with a melted thread receiving rod for attaching melted threads to form the columnar cotton and a first power device for rotating the melted thread receiving rod; the receiving section is configured to receive melted threads; the apparatus for manufacturing liquid storage cotton further includes a detaching assembly, which includes a threaded sleeve provided with inner threads. When the melted thread receiving rod is rotated by the first power device to form columnar cotton, the inner threads of the threaded sleeve closely fit the columnar cotton and allow the columnar cotton to move away from the first power device.
Fig. 3
APPARATUS FOR MANUFACTURING LIQUID STORAGE COTTON

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation of International Application No. PCT/CN2014/088301, titled "APPARATUS FOR MANUFACTURING LIQUID STORAGE COTTON", filed on Sep. 30, 2014, the entire disclose of which is incorporated herein by this reference.

TECHNICAL FIELD

[0002] The present application relates to the field of manufacturing electronic cigarette parts, and in particular to an apparatus for manufacturing liquid storage cotton.

BACKGROUND

[0003] An electronic cigarette includes a liquid storage assembly for storing cigarette liquid and an atomizing assembly for atomizing cigarette liquid in structure. Specifically, the atomizing assembly further includes an electric heating wire assembly for atomizing cigarette liquid. When the electronic cigarette operates, cigarette liquid flows into an atomizing chamber of the atomizing assembly from the liquid storage assembly, and the electric heating wire is powered by a battery rod to generate heat so as to atomize the cigarette liquid into smoke. In order to improve the efficiency of atomization of the electric heating wire, cigarette liquid is generally required to be stored around the electric heating wire uniformly, and in an existing electronic cigarette, the cotton used as a part by which cigarette liquid is stored around the electric heating wire uniformly is of columnar.

[0004] In conventional art, an apparatus for manufacturing the columnar cotton includes a melt-blown machine and a receiving device. As shown in FIG. 1, a base 101 is provided on the receiving device, and a first fixing seat 102, a second fixing seat 103, a first electrical motor 104, a second motor 105 and a rolling device 106 are provided at two ends of the base 101. A threaded guiding rod 107 is in an interference fit with the first fixing seat 102 and the second fixing seat 103, and a roller 108 is further provided on the second fixing seat 103. Both of the first electrical machine 104 and the second electrical machine 105 are connected to the threaded guiding rod 107 on the first fixing seat 103 through conveyor belts, and the melt-blown machine is located at a side of the threaded guiding rod 107 between the first fixing seat 102 and the second fixing seat 103. When the apparatus operates, the melt-blown machine blows cotton onto the threaded guiding rod 107. The threaded guiding rod 107 can be rotated by the first electrical machine 104, and the threaded guiding rod 107 can be rotated and moved by the second electrical machine 105, which may lead a different rotation speed with that rotated by the first electrical machine 104, such that the columnar cotton on the threaded guiding rod 107 is rotated and moved to another side of the second fixing seat 103 by the rolling device 106 on the second fixing seat 103. This process repeats and many pieces of columnar cotton are manufactured.

[0005] As the processing for electronic cigarette is getting fine, the diameter of the columnar cotton of the electronic cigarette is required to be small. In conventional art, however, when the columnar cotton to be manufactured is relatively small, the threaded guiding rod is required to have a very small diameter. If the diameter of the threaded guiding rod is too small, the frictional force between the threaded guiding rod and the cotton affixed on the threaded guiding rod is relatively small. Thus, when the columnar cotton is delivered outward by the threaded guiding rod through the second fixing seat, the columnar cotton may be stayed inbetween the first fixing seat and the second fixing seat when being blocked due to the relatively small frictional force between the columnar cotton and the threaded guiding rod. Thus the columnar cotton is unable to be delivered outward. Moreover, the columnar cotton manufactured by the threaded guiding rod forms a groove with an internal thread pattern due to the action of threads. Thus, the amount of cigarette can be stored is limited, and the flow of smoke is also blocked.

SUMMARY

[0006] In view of this, an apparatus for manufacturing an electronic cigarette part, specifically liquid storage cotton, is provided by the present application.

[0007] An apparatus for manufacturing liquid storage cotton, including:

[0008] a melt-blown device and a melt-blown cotton receiving device configured to receive melted threads blown from the melt-blown device to manufacture columnar liquid storage cotton; wherein

[0009] the melt-blown cotton receiving device is provided with a melted thread receiving rod for attaching melted threads to form the columnar cotton and a first power device for rotating the melted thread receiving rod;

[0010] the melted thread receiving rod is provided with a connecting section and a receiving section, and the connecting section is connected with the first power device, and the receiving section is configured to receive melted threads;

[0011] the apparatus for manufacturing liquid storage cotton further includes a detaching assembly, which is configured to detach columnar cotton from the melted thread receiving rod as the first power device rotates the melted thread receiving rod to form the columnar cotton;

[0012] the detaching assembly includes a threaded sleeve provided with inner threads, the melted thread receiving rod is arranged in a direct line with the threaded sleeve; and

[0013] when the columnar cotton is formed on the melted thread receiving rod, the inner threads of the threaded sleeve closely fit the columnar cotton and allow the columnar cotton to be detached from the melted thread receiving rod.

[0014] In the apparatus for manufacturing liquid storage cotton, the detaching assembly further includes a second power device; and

[0015] the second power device is configured to rotate the threaded sleeve in a direction opposite to the rotating direction of the melted thread receiving rod, thus when the columnar cotton is formed on the rotating melted thread receiving rod, the columnar cotton is detached from the melted thread receiving rod by the threaded sleeve.

[0016] In the apparatus for manufacturing liquid storage cotton, the detaching assembly further includes a second power device; and the second power device is configured to rotate the threaded sleeve in a direction same with the rotating direction of the melted thread receiving rod; and
a rotation speed of the threaded sleeve driven by the second power device is higher than a rotation speed of the melted thread receiving rod driven by the first power device, thus when the columnar cotton is formed on the rotating melted thread receiving rod, the columnar cotton is detached from the melted thread receiving rod by the threaded sleeve.

In the apparatus for manufacturing liquid storage cotton,

the apparatus for manufacturing liquid storage cotton is further provided with a baseplate for fixing the melt-blown device, the melt-blown cotton receiving device and the detaching assembly; and

the apparatus for manufacturing liquid storage cotton further includes a moving assembly which is configured to move the melted thread receiving rod and the first power device when the columnar cotton is formed by the melted threads on the melted thread receiving rod.

In the apparatus for manufacturing liquid storage cotton,

the moving assembly includes: a detector, a moving groove, a moving plate located in the moving groove, and a power assembly;

the detector is configured to detect whether the columnar cotton on the melted thread receiving rod has been formed before the melted thread receiving rod and the first power device are moved;

both of the melted thread receiving rod and the first power device are located on the moving plate;

an end of the power assembly is connected to the moving plate, and the other end of the power assembly is fixed on the baseplate; and

when it is detected that columnar cotton on the melted thread receiving rod has been formed by the detector, the power assembly moves the moving plate and the melted thread receiving rod is embedded into the threaded sleeve through the moving groove.

In the apparatus for manufacturing liquid storage cotton, the power assembly includes an air cylinder and a connecting rod;

an end of the connecting rod is retractably connected with the air cylinder, and the other end of the connecting rod is connected to the moving plate; and

the air cylinder is fixed on the baseplate.

In the apparatus for manufacturing liquid storage cotton,

the apparatus for manufacturing liquid storage cotton is further provided with a baseplate for fixing the melt-blown device, the melt-blown cotton receiving device and the detaching assembly; and

the apparatus for manufacturing liquid storage cotton further includes a moving assembly which is configured to move the columnar cotton on the melted thread receiving rod into the threaded sleeve before the columnar cotton closely fits the inner threads of the threaded sleeve.

In the apparatus for manufacturing liquid storage cotton,

the moving assembly includes: a moving track provided on the baseplate, and a moving arm located on the moving track;

the moving arm includes: a first air cylinder, a second air cylinder, a third air cylinder and a clamping finger;

the first air cylinder is configured to allow the clamping finger to extend to the columnar cotton on the melted thread receiving rod before the columnar cotton on the melted thread receiving rod closely fits the inner threads of the threaded sleeve;

the third air cylinder is configured to allow the clamping finger to clamp the columnar cotton when the clamping finger moves to the columnar cotton;

the second air cylinder is configured to allow the clamping finger to move towards the threaded sleeve when the clamping finger clamps the columnar cotton, thus the columnar cotton closely fits the inner threads of the threaded sleeve;

when the columnar cotton is moved by the clamping finger to closely fit the inner threads of the threaded sleeve, the third air cylinder allows the clamping finger to release the columnar cotton;

when the columnar cotton is released by the clamping finger, the first air cylinder allows the clamping finger to retract away from the columnar cotton; and

when the clamping finger retracts away from the columnar cotton, the second air cylinder allows the clamping finger to move away from the threaded sleeve.

In the apparatus for manufacturing liquid storage cotton, the moving arm is further provided with a sliding track, a connecting block and a moving base;

the moving base is located in the moving track; and

the connecting block is located in the sliding track for connecting the clamping finger and the moving base.

In the apparatus for manufacturing liquid storage cotton,

the apparatus for manufacturing liquid storage cotton further includes a rolling component; and

the rolling component is configured to roll the columnar cotton detached from the melted thread receiving rod.

In the apparatus for manufacturing liquid storage cotton,

the rolling component includes: multiple rollers, and a roller supporting block for supporting the rollers; and

when the columnar cotton already moved by the threaded sleeve moves into the rolling component, the rollers closely fits the columnar cotton to move synchronously.

In the apparatus for manufacturing liquid storage cotton, the apparatus for manufacturing liquid storage cotton further includes a receiving groove, and a fixing block for fixing the receiving groove;

the receiving groove is configured to receive the columnar cotton detached from the melted thread receiving rod; and

the receiving groove is configured to deliver the columnar cotton to the rolling component.

In the apparatus for manufacturing liquid storage cotton,

the melt-blown cotton receiving device is further provided with a first connecting component for connecting the melted thread receiving rod and the first power device;
the first connecting component is provided with a first gear, a first hollow shaft, a first bearing for fixing the first hollow shaft, and a first bearing seat for accommodating the first bearing; the first gear is mounted on the first hollow shaft, the first hollow shaft is mounted on the first bearing, and the first bearing is mounted on the first bearing seat, the connecting section of the melted thread receiving rod is connected to the first hollow shaft;

the connecting component is further provided with a second gear, the first power device is connected to the second gear; and

the connecting component is further provided with a first conveyor belt, the first conveyor belt is rotated about the first gear and the second gear for rotating the first gear as the second gear rotates. In the apparatus for manufacturing liquid storage cotton,

detaching assembly is further provided with a second connecting component for connecting the threaded sleeve and the second power device;

the second connecting component is further provided with a third gear, a second hollow shaft, a second bearing for fixing the second hollow shaft, and a second bearing seat for accommodating the second bearing; the third gear is mounted on the second hollow shaft, the second hollow shaft is mounted on the second bearing, and the second bearing is mounted on the second bearing seat, the threaded sleeve is connected to the second bearing;

the second hollow shaft is further configured to fix the threaded sleeve, and the second hollow shaft is located between the second bearing and the threaded sleeve and closely fits each of them;

the second connecting component is further provided with a fourth gear, and the second power device is connected to the fourth gear; and

the second connecting component is further provided with a second conveyor belt; the second conveyor belt is rotated about the third gear and the fourth gear for rotating the third gear as the fourth gear rotates. In the apparatus for manufacturing liquid storage cotton, an outer circumferential surface of the receiving section is not provided with an external thread.

In the apparatus for manufacturing liquid storage cotton, each of cross sections of the receiving section at different positions along an axial direction thereof is of a convex polygonal shape.

In the apparatus for manufacturing liquid storage cotton,

the apparatus for manufacturing liquid storage cotton further includes a cooling device, the melted thread receiving rod is a metal rod, and a cooling channel is provided in the metal rod in an axial direction of the metal rod, the melted thread receiving rod is cooled by the cooling device via the cooling channel.

In the apparatus for manufacturing liquid storage cotton, the threaded sleeve is a half-threaded sleeve.

The present application provides an apparatus for manufacturing liquid storage cotton used for an electronic cigarette, which includes a melt-blown device and a melt-blown cotton receiving device configured to receive melted threads blown from the melt-blown device to manufacture a columnar liquid storage cotton; wherein the melt-blown cotton receiving device is provided with a melted thread receiving rod configured to attach melted threads to form columnar cotton, and a first power device configured to rotate the melted thread receiving rod; the melted thread receiving rod is provided with a connecting section and a receiving section, the connecting section is connected with the first power device; and the receiving section is configured to receive melted threads; the apparatus for manufacturing liquid storage cotton further includes a detaching assembly, which is configured to detach columnar cotton from the melted thread receiving rod as the first power device rotates the melted thread receiving rod to form the columnar cotton, and the detaching assembly includes a threaded sleeve provided with internal threads, and when the first power device rotates the melted thread receiving rod to form the columnar cotton, the inner threads of the threaded sleeve closely fit the columnar cotton and allow the columnar cotton to move away from the first power device. In this way, since the diameter of the threaded sleeve is larger than the diameter of the melted thread receiving rod, the area of the inner threads of the threaded sleeve contacting with the columnar cotton is larger, which increases the frictional force and improves transmission efficiency. Furthermore, the columnar cotton formed by the apparatus does not have a threaded inner surface, thus avoiding problems in the conventional art that the flow of smoke is restricted due to the blocking of the thread structure, and the heat of the smoke is apt to be absorbed by cigarette liquid at threaded places and therefore the smoke is condensed, and the storage amount of the cigarette liquid is restricted.

BRIEF DESCRIPTION OF THE DRAWINGS

In order to illustrate the technical solutions in the embodiments of the present application or the conventional art more clearly, the accompanying drawings required by describing the embodiments or conventional art will be illustrated briefly below. Apparently, the accompanying drawings described below are only a few of embodiments of the present application, and for those skilled in the art, other accompanying drawings will be obtained according to those accompanying drawings without any creative work.

FIG. 1 is a schematic view of manufacturing columnar cotton in the conventional art;

FIG. 2 is a schematic view showing the structure of an apparatus for manufacturing liquid storage cotton according to the present application;

FIG. 3 is a schematic view showing the structure of an apparatus for manufacturing liquid storage cotton including a second power device according to the present application;

FIG. 4 is a schematic view showing the structure of an apparatus for manufacturing liquid storage cotton including a moving assembly according to the present application;

FIG. 5 is a partial schematic view showing the structure of another apparatus for manufacturing liquid storage cotton including the moving assembly according to the present application;

FIG. 6 is a schematic view showing the structure of an apparatus for manufacturing liquid storage cotton including a rolling apparatus and a cooling device according to the present application; and

FIG. 7 is a partial schematic view showing the structure of an apparatus for manufacturing liquid storage cotton including a connecting component according to the present application.
DETAILED DESCRIPTION

[0077] An apparatus for manufacturing liquid storage cotton is provided according to the present application. The specific structure of the apparatus for manufacturing liquid storage cotton according to the present application will be described in detail below in conjunction with FIG. 2.

[0078] In the present embodiment, the apparatus for manufacturing liquid storage cotton includes:

- A melt-blown device 201 and a melt-blown cotton receiving device 202 for receiving melted threads blown from the melt-blown device to manufacture columnar liquid storage cotton.

- The melt-blown cotton receiving device 202 is provided with a melted thread receiving rod 203 for attaching melted threads to form the columnar cotton and a first power device 204 for rotating the melted thread receiving rod.

- The power device may be an electrical motor.

- The melting thread receiving rod 203 is provided with a connecting section and a receiving section. The connecting section is connected with the first power device 204. The receiving section is configured to receive melted threads.

[0080] The melt-blown device 201 is located at a side of the receiving section and blows melted threads to the receiving section continuously. The receiving section is rotated by the first power device to form the columnar cotton.

[0081] The apparatus for manufacturing liquid storage cotton further includes a detachable assembly 205, which is configured to detach the columnar cotton from the melted thread receiving rod 203 when the melted thread receiving rod 203 is rotated by the first power device 204 to form the columnar cotton.

[0082] The detachable assembly 205 includes a thread sleeve 206 provided with inner threads, and the melted thread receiving rod 203 is arranged in a direct line with the thread sleeve 206.

[0083] When columnar cotton is formed on the melted thread receiving rod 203, the inner threads of the thread sleeve 206 closely fit the columnar cotton and allow the columnar cotton to be detached from the melted thread receiving rod 203.

[0084] When the inner threads of the thread sleeve 206 closely fit the columnar cotton, the frictional force between the thread sleeve and the columnar cotton is larger than the frictional force between the columnar cotton and the melted thread receiving rod. Therefore, the columnar cotton can be detached from the melted thread receiving rod and moved as the melted thread receiving rod rotates.

[0085] In the present embodiment, the thread sleeve is provided with the inner threads to fit the columnar cotton. In this way, the diameter of the thread sleeve is larger than the diameter of the melted thread receiving rod, thus the area of the inner threads of the thread sleeve contacting with the columnar cotton is increased, thereby the frictional force is increased and transmission efficiency is improved.

[0086] In the embodiment described above, the melted thread receiving rod is rotated by the first power device, allowing a frictional force to be generated between the columnar cotton on the melted thread receiving rod and an inner side of the thread sleeve and further allowing the columnar cotton to be detached from the melted thread receiving rod. In practical use, the detachable assembly further includes a second power device which is configured to rotate the thread sleeve so as to detach the columnar cotton from the melted thread receiving rod. The second power device of the detachable assembly will be described below in conjunction with FIG. 3. Another embodiment of the apparatus for manufacturing liquid storage cotton includes:

- A melt-blown device 201 and a melt-blown cotton receiving device 202 configured to receive melted threads blown from the melt-blown device to manufacture columnar liquid storage cotton.

- The melt-blown cotton receiving device 202 is provided with a melted thread receiving rod 203 configured to attach melted threads to form columnar cotton and a first power device 204 configured to rotate the melted thread receiving rod.

- The power device may be an electrical motor.

- The melted thread receiving rod 203 is provided with a connecting section and a receiving section. The connecting section is connected with the first power device 204 and the receiving section is configured to receive melted threads.

- The melt-blown device is located at a side of the receiving section and blows melted threads to the receiving section continuously. The receiving section is rotated by the first power device to form the columnar cotton.

- The apparatus for manufacturing liquid storage cotton further includes a detachable assembly 205, which is configured to detach columnar cotton from the melted thread receiving rod 203 when the melted thread receiving rod 203 is rotated by the first power device 204 to form the columnar cotton.

- The detachable assembly 205 includes a thread sleeve 206 provided with inner threads. The melted thread receiving rod 203 is arranged in a direct line with the thread sleeve 206.

- When the columnar cotton is formed on the melted thread receiving rod 203, the inner threads of the thread sleeve 206 closely fit the columnar cotton and allow the columnar cotton to be detached from the melted thread receiving rod 203.

- When the inner threads of the thread sleeve 206 closely fit the columnar cotton, the frictional force between the thread sleeve and the columnar cotton is larger than the frictional force between the columnar cotton and the melted thread receiving rod, therefore, the columnar cotton is detached from the melted thread receiving rod and moved as the melted thread receiving rod rotates.

- The detachable assembly further includes a second power device 301.

- The second power device 301 is configured to rotate the thread sleeve 206 in a direction opposite to the rotating direction of the melted thread receiving rod 203, thus when the melted thread receiving rod 203 is rotated to form the columnar cotton thereon, the columnar cotton is detached from the melted thread receiving rod by the thread sleeve.

- Since the frictional force between the columnar cotton and the thread sleeve is larger than the frictional force between the columnar cotton and the melted thread receiving rod, the columnar cotton can be definitely detached from the melted thread receiving rod when the thread sleeve and the melted thread receiving rod are rotated in opposite directions.

- Correspondingly, the second power device 301 is configured to rotate the thread sleeve 206 in a same direction with the rotating direction of the melted thread receiving rod 203.
A rotation speed of the threaded sleeve 206 driven by the second power device 301 is higher than a rotation speed of the melted thread receiving rod 203 driven by the first power device 204, thus when the columnar cotton is formed on the rotating melted thread receiving rod 203, the columnar cotton is detached from the melted thread receiving rod 203 by the threaded sleeve 206.

Since the frictional force between the columnar cotton and the threaded sleeve is larger than the frictional force between the columnar cotton and the melted thread receiving rod, the columnar cotton can definitely be detached from the melted thread receiving rod as there is a difference between rotation speeds of the threaded sleeve and the melted thread receiving rod.

In the present embodiment, the threaded sleeve is rotated by the second power device and the melted thread receiving rod is rotated by the first power device. Since the rotation speeds are different or opposite, the columnar cotton can be detached from the melted thread receiving rod. Because different electronic cigarettes require different columnar cotton, the threaded sleeve and the melted thread receiving rod are provided with a power device respectively so that factors such as the rotation speed of the melted thread receiving rod can be controlled in the manufacturing process for convenience, and individual parts can be finely adjusted in the manufacturing process, improving manufacturing efficiency.

In the embodiment described above, the inner threads of the threaded sleeve closely fit the columnar cotton, such that the columnar cotton is detached from the melted thread receiving rod. In the practical use, when the apparatus begins to operate, placing a first section of columnar cotton in the threaded sleeve is achieved by arranging a moving assembly. The moving assembly will be described specifically below in conjunction with FIG. 4. In the embodiment of the present application, another embodiment of the apparatus for manufacturing liquid storage cotton includes:

A melt-blown device and a melt-blown cotton receiving device configured to receive melted threads blown from the melt-blown device to manufacture columnar liquid storage cotton.

The melt-blown cotton receiving device is provided with a melted thread receiving rod configured to attach melted threads for forming columnar cotton and a first power device configured to rotate the melted thread receiving rod.

The power device may be an electrical motor.

The melted thread receiving rod is provided with a connecting section and a receiving section. The connecting section is connected with the first power device, and the receiving section is configured to receive melted threads.

The melt-blown device is located at a side of the receiving section and blows melted threads to the receiving section continuously. The first power device rotates the receiving section to form the columnar cotton.

The apparatus for manufacturing liquid storage cotton further includes a detaching assembly, which is configured to detach columnar cotton from the melted thread receiving rod when the melted thread receiving rod is rotated by the first power device to form the columnar cotton.

The detaching assembly includes a threaded sleeve provided with inner threads. The melted thread receiving rod is arranged in a direct line with the threaded sleeve.

When the columnar cotton is formed on the rotating melted thread receiving rod, the inner threads of the threaded sleeve closely fit the columnar cotton and allow the columnar cotton to be detached from the melted thread receiving rod.

When the inner threads of the threaded sleeve closely fit the columnar cotton, the frictional force between the threaded sleeve and the columnar cotton is larger than the frictional force between the columnar cotton and the melted thread receiving rod, therefore, the columnar cotton is detached from the melted thread receiving rod and moved as the melted thread receiving rod rotates.

The detaching assembly further includes a second power device.

The second power device is configured to rotate the threaded sleeve in a direction opposite to the melted thread receiving rod, thus when the columnar cotton is formed the rotating melted thread receiving rod, the columnar cotton is detached from the melted thread receiving rod by the threaded sleeve.

Since the frictional force between the columnar cotton and the threaded sleeve is larger than the frictional force between the columnar cotton and the melted thread receiving rod, the columnar cotton can definitely be detached from the melted thread receiving rod as the threaded sleeve is rotated in a direction opposite to the rotating direction of the melted thread receiving rod.

Correspondingly, the second power device is configured to rotate the threaded sleeve in a direction opposite to the rotating direction of the melted thread receiving rod.

A rotation speed of the threaded sleeve driven by the second power device is higher than a rotation speed of the melted thread receiving rod driven by the first power device, thus when the columnar cotton is formed on the rotating melted thread receiving rod, the columnar cotton is detached from the melted thread receiving rod by the threaded sleeve.

Since the frictional force between the columnar cotton and the threaded sleeve is larger than the frictional force between the columnar cotton and the melted thread receiving rod, the columnar cotton can definitely be detached from the melted thread receiving rod as there is a difference between rotation speeds of the threaded sleeve and the melted thread receiving rod.

The apparatus for manufacturing liquid storage cotton is further provided with a baseplate 401, which is configured to fix the melt-blown device, the melt-blown cotton receiving device and the detaching assembly.

The apparatus for manufacturing liquid storage cotton further includes a moving assembly which is configured to move the melted thread receiving rod and the first power device when the columnar cotton melted threads is formed on the melted thread receiving rod.

Preferably, the moving assembly includes: a detector 402, a moving groove 403, a moving plate 404 located in the moving groove 403, and a power assembly 405.

The detector 402 is configured to detect whether the columnar cotton on the melted thread receiving rod has been formed before the melted thread receiving rod and the first power device are moved.

Both of the melted thread receiving rod and the first power device are located on the moving plate 404.

An end of the power assembly 405 is connected to the moving plate 404, and the other end of the power assembly 405 is fixed on the baseplate 401.

When the detector 402 detects that columnar cotton on the melted thread receiving rod has been formed, the power assembly 405 moves the moving plate 404 such that
the melted thread receiving rod is embedded into the threaded sleeve by the moving groove 403.

[0130] Preferably, the power assembly 405 includes an air cylinder 406 and a connecting rod 407.

[0131] An end of the connecting rod 407 is retractably connected with the air cylinder 406, and the other end of the connecting rod 407 is connected to the moving plate 404.

[0132] The air cylinder 406 is fixed on the baseplate 401.

[0133] In the present embodiment, when the apparatus begins to operate, the detector detects whether the columnar cotton has been formed by melted threads on the melted thread receiving rod, then the moving assembly is controlled such that the melted thread receiving rod is embedded into the threaded sleeve, allowing the columnar cotton to closely fit with the threaded sleeve. In this way, a full automatic production of the apparatus is realized and the usability of the apparatus is improved.

[0134] In the embodiment described above, the melted thread receiving rod is moved by the moving assembly so as to be embedded into the threaded sleeve. In the practical use, the columnar cotton on the melted thread receiving rod can be directly moved into the threaded sleeve by the moving assembly. Another device of the moving assembly will be described specifically below in conjunction with FIG. 5. In the embodiment of the present application, another embodiment of the apparatus for manufacturing liquid storage cotton includes:

[0135] a melt-blown device and a melt-blown cotton receiving device configured to receive melted threads blown from the melt-blown device to manufacture a columnar liquid storage cotton.

[0136] The melt-blown cotton receiving device is provided with a melted thread receiving rod configured to attach melted threads to form columnar cotton and a first power device configured to rotate the melted thread receiving rod.

[0137] The power device may be an electrical motor.

[0138] The melted thread receiving rod is provided with a connecting section and a receiving section, and the connecting section is connected with the first power device, and the receiving section is configured to receive melted threads.

[0139] The melt-blown device is located at a side of the receiving section and blows melted threads to the receiving section continuously, and the first power device rotates the receiving section to form columnar cotton.

[0140] The apparatus for manufacturing liquid storage cotton further includes a detaching assembly, which is configured to detach columnar cotton from the melted thread receiving rod as the first power device rotates the melted thread receiving rod to form the columnar cotton;

[0141] The detaching assembly includes a threaded sleeve provided with inner threads, and the melted thread receiving rod is arranged in a direct line with the threaded sleeve.

[0142] When the columnar cotton is formed on the melted thread receiving rod, the inner threads of the threaded sleeve closely fit the columnar cotton and allow the columnar cotton to be detached from the melted thread receiving rod.

[0143] When the inner threads of the threaded sleeve closely fit the columnar cotton, the frictional force between the threaded sleeve and the columnar cotton is larger than the frictional force between the columnar cotton and the melted thread receiving rod, therefore, the columnar cotton is detached from the melted thread receiving rod and moved as the melted thread receiving rod rotates.

[0144] The detaching assembly further includes a second power device.

[0145] The second power device is configured to rotate the threaded sleeve in a direction opposite to the rotating direction of the melted thread receiving rod, such that when the columnar cotton is formed on the melted thread receiving rod, the columnar cotton is detached from the melted thread receiving rod by the threaded sleeve.

[0146] Since the frictional force between the columnar cotton and the threaded sleeve is larger than the frictional force between the columnar cotton and the melted thread receiving rod, the columnar cotton can definitely be detached from the melted thread receiving rod when the threaded sleeve and the melted thread receiving rod are rotated in opposite directions.

[0147] Correspondingly, the second power device is configured to rotate the threaded sleeve in a same direction with the rotating direction of the melted thread receiving rod 203;

[0148] a rotation speed of the threaded sleeve driven by the second power device is higher than a rotation speed of the melted thread receiving rod driven by the first power device, such that when the columnar cotton is formed on the melted thread receiving rod, the columnar cotton is detached from the melted thread receiving rod by the threaded sleeve;

[0149] since the frictional force between the columnar cotton and the threaded sleeve is larger than the frictional force between the columnar cotton and the melted thread receiving rod, the columnar cotton can definitely be detached from the melted thread receiving rod as there is a difference between rotation speeds of the threaded sleeve and the melted thread receiving rod.

[0150] The apparatus for manufacturing liquid storage cotton is further provided with a baseplate 501 which is configured to fix the melt-blown device, the melt-blown cotton receiving device and the detaching assembly;

[0151] the apparatus for manufacturing liquid storage cotton further includes a moving assembly which is configured to move the columnar cotton on the melted thread receiving rod into the threaded sleeve before the columnar cotton closely fits the inner threads of the threaded sleeve.

[0152] Preferably, the moving assembly includes a moving track 502 provided on the baseplate 501 and a moving arm located on the moving track 502.

[0153] The moving arm includes: a first air cylinder 504, a second air cylinder 505, a third air cylinder 506 and a clamping finger 507.

[0154] The first air cylinder 504 is configured to allow the clamping finger 507 to extend to the columnar cotton before the columnar cotton on the melted thread receiving rod closely fits the inner threads of the threaded sleeve 206.

[0155] The third air cylinder 506 is configured to allow the clamping finger 507 to clamp the columnar cotton when the clamping finger 507 is moved to the columnar cotton;

[0156] the second air cylinder 505 is configured to allow the clamping finger 507 to move towards the threaded sleeve when the clamping finger 507 clamps the column-
nar cotton, such that the columnar cotton closely fits the inner threads of the threaded sleeve 206.

[0157] when the clamping finger 507 moves the columnar cotton to closely fit the inner threads of the threaded sleeve, the third air cylinder 506 allows the clamping finger 507 to release the columnar cotton.

[0158] when the clamping finger 507 releases the columnar cotton, the first air cylinder 504 allows the clamping finger 507 to retract away from the columnar cotton.

[0159] when the clamping finger 507 retracts away from the columnar cotton, the second air cylinder 505 allows the clamping finger 507 to move away from the threaded sleeve.

[0160] Preferably, the moving arm is further provided with a sliding track 508, a connecting block 509 and a moving base 510.

[0161] the moving base 510 is located in the moving track 502.

[0162] the connecting block 509 is located in the sliding track 508 for connecting the clamping finger 507 and the moving base 510.

[0163] In the present embodiment, when the apparatus begins to operate, the clamping finger clamps the columnar cotton formed on the melted thread receiving rod and further embed it into the threaded sleeve by three air cylinders, at this time, the columnar cotton begins to be detached from the melted thread receiving rod, such that subsequent columnar cotton is driven by the threaded sleeve effectively to be detached from the melted thread receiving rod and moved.

[0164] In the embodiment described above, a relatively large frictional force is generated between the threaded sleeve and the columnar cotton, such that the columnar cotton is detached from the melted thread receiving rod. In the practical use, after the columnar cotton is detached, the columnar cotton is required to be rolled to have a smooth outer circumferential surface and become the required part. A rolling component configured to roll the columnar cotton detached from the melted thread receiving rod will be described specifically below in conjunction with FIG. 6. In the embodiments of the present application, another embodiment of the apparatus for manufacturing liquid storage cotton includes:

[0165] a melt-blown device 201 and a melt-blown cotton receiving device 202 configured to receive melted threads blown from the melt-blown device to manufacture a columnar liquid storage cotton.

[0166] The melt-blown cotton receiving device 202 is provided with a melted thread receiving rod 203 configured to attach melted threads to form columnar cotton, and a first power device 204 configured to rotate the melted thread receiving rod;

[0167] the power device may be an electrical machine.

[0168] The melted thread receiving rod 203 is provided with a connecting section and a receiving section, and the connecting section is connected with the first power device 204; and the receiving section is configured to receive melted threads.

[0169] the melt-blown device is located at a side of the receiving section and blows melted threads to the receiving section continuously; and the first power device rotates the receiving section to form columnar cotton.

[0170] The apparatus for manufacturing liquid storage cotton further includes a detaching assembly 205, which is configured to detach columnar cotton from the melted thread receiving rod 203 as the first power device 204 rotates the melted thread receiving rod 203 to form the columnar cotton;

[0171] the detaching assembly 205 includes a threaded sleeve 206 provided with inner threads, and the melted thread receiving rod 203 is arranged in a direct line with the threaded sleeve 206;

[0172] when the columnar cotton is formed on the melted thread receiving rod 203, the inner threads of the threaded sleeve 206 closely fit the columnar cotton and allow the columnar cotton to be detached from the melted thread receiving rod 203;

[0173] when the inner threads of the threaded sleeve 206 closely fit the columnar cotton, the frictional force between the threaded sleeve and the columnar cotton is larger than the frictional force between the columnar cotton and the melted thread receiving rod, therefore, the columnar cotton is detached from the melted thread receiving rod and moved as the melted thread receiving rod rotates.

[0174] The detaching assembly further includes a second power device 301;

[0175] the second power device 301 is configured to rotate the threaded sleeve 206 in a direction opposite to the rotating direction of the melted thread receiving rod 203, such that when the columnar cotton is formed on the rotating melted thread receiving rod 203, the columnar cotton is detached from the melted thread receiving rod by the threaded sleeve;

[0176] since the frictional force between the columnar cotton and the threaded sleeve is larger than the frictional force between the columnar cotton and the melted thread receiving rod, the columnar cotton can definitely be detached from the melted thread receiving rod when the threaded sleeve and the melted thread receiving rod are rotated in opposite directions.

[0177] Correspondingly, the second power device 301 is configured to rotate the threaded sleeve 206 in a same direction with the rotating direction of the melted thread receiving rod 203;

[0178] a rotation speed of the threaded sleeve 206 driven by the second power device 301 is higher than a rotation speed of the melted thread receiving rod 203 driven by the first power device 204, such that when the columnar cotton is formed on the rotating melted thread receiving rod 203, the columnar cotton is detached from the melted thread receiving rod 203 by the threaded sleeve 206.

[0179] since the frictional force between the columnar cotton and the threaded sleeve is larger than the frictional force between the columnar cotton and the melted thread receiving rod, the columnar cotton can indefinitely be detached from the melted thread receiving rod as there is a difference between rotation speeds of the threaded sleeve and the melted thread receiving rod.

[0180] The apparatus for manufacturing liquid storage cotton further includes a rolling component;

[0181] the rolling component is configured to roll the columnar cotton detached from the melted thread receiving rod.

[0182] Preferably, the rolling component includes: multiple rollers 601, and a roller supporting block 602 for supporting the rollers;
When the columnar cotton already moved by the threaded sleeve 206 moves into the rolling component, the rollers 601 closely fit the columnar cotton to move synchronously.

Preferably, the apparatus for manufacturing liquid storage cotton further includes a receiving groove 603, and a fixing block 604 for fixing the receiving groove.

The receiving groove 603 is configured to receive the columnar cotton detached from the melted thread receiving rod 203;

The receiving groove 603 is configured to deliver the columnar cotton to the rolling component.

In the present embodiment, the outer circumferential surface is rolled uniformly by the rollers through the synchronous rotation of the multiple rollers and the columnar cotton, thus the outer circumferential surface of the columnar cotton rolled is smooth.

In the embodiment described above, the first power device rotates the melted thread receiving rod and the second power device rotates the threaded sleeve. The threaded sleeve allows the columnar cotton to be detached from the melted thread receiving rod due to different rotation speeds or different rotating directions. In the practical use, a first connecting component configured to connect the first power device and the melted thread receiving rod and a second connecting component configured to connect the second power device and the threaded sleeve are provided. The connecting components will be described specifically below in conjunction with FIG. 7. In the embodiments of the present application, another embodiment of the apparatus for manufacturing liquid storage cotton includes:

A melt-blown device and a melt-blown cotton receiving device configured to receive melted threads blown from the melt-blown device to manufacture a columnar liquid storage cotton.

The melt-blown cotton receiving device is provided with a melted thread receiving rod 203 configured to attach melted threads to form columnar cotton and a first power device 204 configured to rotate the melted thread receiving rod;

The power device may be an electrical motor.

The melted thread receiving rod 203 is provided with a connecting section and a receiving section, and the connecting section is connected with the first power device 204, and the receiving section is configured to receive melted threads.

The melt-blown device is located at a side of the receiving section side and blows melted threads to the receiving section continuously, and the receiving section is rotated by the first power device to form the columnar cotton.

The apparatus for manufacturing liquid storage cotton further includes a detaching assembly, which is configured to detach columnar cotton from the melted thread receiving rod 203 as the melted thread receiving rod 203 is rotated by the first power device 204 to form the columnar cotton.

The detaching assembly includes a threaded sleeve 206 provided with inner threads, and the melted thread receiving rod 203 is arranged in a direct line with the threaded sleeve 206;

When the columnar cotton is formed on the melted thread receiving rod 203, the inner threads of the threaded sleeve 206 closely fit the columnar cotton and allow the columnar cotton to be detached from the melted thread receiving rod 203;

When the inner threads of the threaded sleeve closely fit the columnar cotton, the frictional force between the threaded sleeve and the columnar cotton is larger than the frictional force between the columnar cotton and the melted thread receiving rod, therefore, the columnar cotton is detached from the melted thread receiving rod and moved as the melted thread receiving rod rotates.

The detaching assembly further includes a second power device 301;

The second power device 301 is configured to rotate the threaded sleeve 206 in a direction opposite to the rotating direction of the melted thread receiving rod 203, such that when the columnar cotton is formed on the rotating melted thread receiving rod 203, the columnar cotton is detached from the melted thread receiving rod by the threaded sleeve.

Since the frictional force between the columnar cotton and the threaded sleeve is larger than the frictional force between the columnar cotton and the melted thread receiving rod, the columnar cotton can definitely be detached from the melted thread receiving rod as the threaded sleeve and the melted thread receiving rod are rotated in opposite directions.

Correspondingly, the second power device 301 is configured to rotate the threaded sleeve 206 in a same direction with the rotating direction of the melted thread receiving rod 203;

A rotation speed of the threaded sleeve 206 driven by the second power device 301 is higher than a rotation speed of the melted thread receiving rod 203 driven by the first power device 204, thus when the columnar cotton is formed on the rotating melted thread receiving rod 203, the columnar cotton is detached from the melted thread receiving rod 203 by the threaded sleeve 206;

Since the frictional force between the columnar cotton and the threaded sleeve is larger than the frictional force between the columnar cotton and the melted thread receiving rod, the columnar cotton can definitely be detached from the melted thread receiving rod as there is a difference between rotation speeds of the threaded sleeve and the melted thread receiving rod.

The melt-blown cotton receiving device is further provided with a first connecting component for connecting the melted thread receiving rod 203 and the first power device 204.

The first connecting component is provided with a first gear (not shown), a first hollow shaft 702, a first bearing 703 for fixing the first hollow shaft 702, and a first bearing 704 for accommodating the first bearing 703; the first gear is sleeved on the first hollow shaft 702, the first hollow shaft 702 is sleeved on the first bearing 703, and the first bearing 703 is sleeved on the first bearing 704, the connecting section of the melted thread receiving rod 203 is connected to the first hollow shaft 702;

The connecting component is further provided with a second gear 705; the first power device 204 is connected to the second gear 705;

The connecting component is further provided with a first conveyor belt 706; the first conveyor belt 706...
is rotated about the first gear and the second gear 705 for rotating the first gear as the second gear 705 rotates.

[0208] Preferably, the detaching assembly is further provided with a second connecting component for connecting the threaded sleeve 206 and the second power device 301;

[0209] the second connecting component is further provided with a third gear (not shown), a second hollow shaft (not shown), a second bearing (not shown) for fixing the second hollow shaft, and a second bearing seat 707 for accommodating the second bearing, and the third gear is sleeved on the second hollow shaft, and the second hollow shaft is sleeved on the second bearing, and the second bearing is sleeved on the second bearing seat 707, and the threaded sleeve 206 is connected to the second bearing;

[0210] the second hollow shaft is further configured to fix the threaded sleeve, and the second hollow shaft is located between the second bearing and the threaded sleeve, and closely fits each of them;

[0211] the second connecting component is further provided with a fourth gear (not shown), and the second power device 301 is connected to the fourth gear.

[0212] the second connecting component is further provided with a second conveyor belt 708, and the second conveyor belt 708 is sleeved on the third gear and the fourth gear for rotating the third gear as the fourth gear rotates.

[0213] In the present embodiment, the first power device is connected to the melted thread receiving rod by providing the bearing and the convey belt and the second power device is connected to the threaded sleeve, which is convenient for disassembly and assembly, improving the maintenance efficiency.

[0214] In the embodiment described above, columnist cotton is formed by the melted threads on the rotating melted thread receiving rod. In the practical use, a protrusion may be provided on the outer circumferential surface of the melted thread receiving rod for facilitating attaching melted threads. The apparatus for manufacturing liquid storage cotton may be further provided with a cooling device for cooling the melted thread receiving rod. The melted thread receiving rod and the cooling device will be described specifically below with reference to FIG. 6, in the embodiment of the present application, another embodiment of the apparatus for manufacturing liquid storage cotton includes:

[0215] a melt-blown device 201 and a melt-blown cotton receiving device 202 configured to receive melted threads blowned from the melt-blown device to manufacture a columnist liquid storage cotton.

[0216] The melt-blown cotton receiving device 202 is provided with a melted thread receiving rod 203 for attaching melted threads to form columnist cotton and a first power device 204 for rotating the melted thread receiving rod;

[0217] the power device may be an electrical motor.

[0218] The melted thread receiving rod 203 is provided with a connecting section and a receiving section, and the connecting section is connected with the first power device 204, and the receiving section is configured to receive melted threads;

[0219] the melt-blown device is located at a side of the receiving section and blows melted threads to the receiving section continuously, and the receiving section is rotated by the first power device to form columnist cotton.

[0220] The apparatus for manufacturing liquid storage cotton further includes a detaching assembly 205, which is configured to detach columnist cotton from the melted thread receiving rod 203 as the melted thread receiving rod 203 is rotated by the first power device 204 to form the columnist cotton;

[0221] the detaching assembly 205 includes a threaded sleeve 206 provided with inner threads, and the melted thread receiving rod 203 is arranged in a direct line with the threaded sleeve 206;

[0222] when the columnist cotton is formed on the melted thread receiving rod 203, the inner threads of the threaded sleeve 206 closely fit the columnist cotton and allow the columnist cotton to be detached from the melted thread receiving rod 203.

[0223] when the inner threads of the threaded sleeve 206 closely fit the columnist cotton, the frictional force between the threaded sleeve and the columnist cotton is larger than the frictional force between the columnist cotton and the melted thread receiving rod, therefore, the columnist cotton is detached from the melted thread receiving rod and moved as the melted thread receiving rod rotates.

[0224] The detaching assembly further includes a second power device 301;

[0225] the second power device 301 is configured to rotate the threaded sleeve 206 in a direction opposite to the rotating direction of the melted thread receiving rod 203, thus when the columnist cotton is formed on the rotating melted thread receiving rod 203, the columnist cotton is detached from the melted thread receiving rod by the threaded sleeve;

[0226] since the frictional force between the columnist cotton and the threaded sleeve is larger than the frictional force between the columnist cotton and the melted thread receiving rod, the columnist cotton can definitely be detached from the melted thread receiving rod as the threaded sleeve and the melted thread receiving rod are rotated in opposite directions.

[0227] Correspondingly, the second power device 301 is configured to rotate the threaded sleeve 206 in a direction same with the rotating direction of the melted thread receiving rod 203;

[0228] a rotation speed of the threaded sleeve 206 driven by the second power device 301 is higher than a rotation speed of the melted thread receiving rod 203 driven by the first power device 204, thus when the columnist cotton is formed on the rotating melted thread receiving rod 203, the columnist cotton is detached from the melted thread receiving rod 203 by the threaded sleeve 206;

[0229] since the frictional force between the columnist cotton and the threaded sleeve is larger than the frictional force between the columnist cotton and the melted thread receiving rod, the columnist cotton can definitely be detached from the melted thread receiving rod as there is a difference between rotation speeds of the threaded sleeve and the melted thread receiving rod;

[0230] An outer circumferential surface of the receiving section is not provided with an external thread;

[0231] in the conventional art, the columnist cotton is detached and moved by providing an external thread on the melted thread receiving rod, however, in the present application, instead of an external thread, the melted
the melt-blown cotton receiving device is provided with a melted thread receiving rod for attaching melted threads to form columnar cotton and a first power device for rotating the melted thread receiving rod;
the melted thread receiving rod is provided with a connecting section and a receiving section, and the connecting section is connected with the first power device, and the receiving section is configured to receive melted threads;
the apparatus for manufacturing liquid storage cotton further comprises a detaching assembly, which is configured to detach columnar cotton from the melted thread receiving rod as the melted thread receiving rod is rotated by the first power device to form the columnar cotton;
the detaching assembly comprises a threaded sleeve provided with inner threads, the melted thread receiving rod is arranged in a direct line with the threaded sleeve; and when the columnar cotton is formed on the melted thread receiving rod, the inner threads of the threaded sleeve closely fit the columnar cotton and allow the columnar cotton to be detached from the melted thread receiving rod.

2. The apparatus for manufacturing liquid storage cotton according to claim 1, wherein the detaching assembly further comprises a second power device; and the second power device is configured to rotate the threaded sleeve in a direction opposite to the rotating direction of the melted thread receiving rod, such that when the columnar cotton is formed on the rotating melted thread receiving rod, the columnar cotton is detached from the melted thread receiving rod by the threaded sleeve.

3. The apparatus for manufacturing liquid storage cotton according to claim 1, wherein the detaching assembly further comprises a second power device; and the second power device is configured to rotate the threaded sleeve in a direction same with the rotating direction of the melted thread receiving rod to rotate; and a rotation speed of the threaded sleeve driven by the second power device is higher than a rotation speed of the melted thread receiving rod driven by the first power device, such that when the columnar cotton is formed on the rotating melted thread receiving rod, the columnar cotton is detached from the melted thread receiving rod by the threaded sleeve.

4. The apparatus for manufacturing liquid storage cotton according to claim 1, wherein the apparatus for manufacturing liquid storage cotton is further provided with a baseplate for fixing the melt-blown device, the melt-blown cotton receiving device and the detaching assembly; and
the apparatus for manufacturing liquid storage cotton further comprises a moving assembly, which is configured to move the melted thread receiving rod and the first power device when the columnar cotton is formed by the melted threads on the melted thread receiving rod.

5. The apparatus for manufacturing liquid storage cotton according to claim 4, wherein the moving assembly comprises: a detector, a moving groove, a moving plate located in the moving groove, and a power assembly; the detector is configured to detect whether the columnar cotton on the melted thread receiving rod has been

[0232] Each of cross sections of the receiving section at different positions along an axial direction thereof is of a convex polygonal shape.

[0233] Reference is made to FIG. 6. Preferably, the apparatus for manufacturing liquid storage cotton further includes a cooling device 801, and the melted thread receiving rod 203 is a metal rod, and a cooling channel is provided in the metal rod in an axial direction of the metal rod, and the melted thread receiving rod 203 is cooled by the cooling device 801 via the cooling channel;

[0234] since the melted thread receiving rod continuously receives melt blow from the melt-blown machine, the temperature can be increased continuously, which is not easy to form and cool the columnar cotton, however, cooling the melted thread receiving rod by the cooling device may facilitate the formation of the columnar cotton, and providing a cooling channel on in the melted thread receiving rod also prevents liquid in the cooling device from contaminating the columnar cotton on the melted thread receiving rod.

[0235] Preferably, the threaded sleeve is a half-threaded sleeve.

[0236] since the threaded sleeve acts on the columnar cotton, a thread pattern is formed on the outer circumferential surface of the columnar cotton, and the outer circumferential surface of the columnar cotton is not smooth. In order to reduce the thread pattern of the columnar cotton, the threaded sleeve is configured into a half-threaded sleeve. It should be noted that as long as the frictional force between the threaded sleeve and the columnar cotton is large enough, the inner threads of the threaded sleeve can be set in any pattern.

[0237] In the present embodiment, the melted thread receiving rod is not provided with an external thread, thus there is no thread pattern on the inner side of the columnar cotton detached, which prevents the columnar cotton from blocking the flow of smoke and limiting the amount of cigarette liquid when being used in an electronic cigarette device. The apparatus for manufacturing liquid storage cotton is further provided with a cooling device, which is configured to cool the melted thread receiving rod, thus the columnar cotton is easier to be formed and cooled, improving the quality of production.

[0238] The above embodiments are only used for illustrating the technical solution of the present application, not for limiting the present application; although the present application has been described in detail with reference to the foregoing embodiments, it should be understood for those skilled in the art that modifications can also be made to the technical solution set out in the foregoing embodiments, or equivalents can be made to part of the technical features; and those modifications and equivalents do not make the nature of the corresponding technical solution depart from the spirit and scope of the technical solutions of the embodiments of the present application.

1. An apparatus for manufacturing liquid storage cotton, comprising a melt-blown device and a melt-blown cotton receiving device configured to receive melted threads blown from the melt-blown device to manufacture a columnar liquid storage cotton; wherein
formed before the melted thread receiving rod and the first power device are moved; both of the melted thread receiving rod and the first power device are located on the moving plate; an end of the power assembly is connected to the moving plate, and the other end of the power assembly is fixed on the baseplate; and when it is detected that columnar cotton on the melted thread receiving rod has been formed by the detector, the moving plate is moved by the power assembly and the melted thread receiving rod is embedded into the threaded sleeve through the moving groove.

6. The apparatus for manufacturing liquid storage cotton according to claim 5, wherein the power assembly comprises an air cylinder and a connecting rod; an end of the connecting rod is retractably connected with the air cylinder, and the other end of the connecting rod is connected to the moving plate; and the air cylinder is fixed on the baseplate.

7. The apparatus for manufacturing liquid storage cotton according to claim 1, wherein the apparatus for manufacturing liquid storage cotton is further provided with a baseplate for fixing the melt-blown device, the melt-blown cotton receiving device and the detaching assembly; and the apparatus for manufacturing liquid storage cotton further comprises a moving assembly which is configured to move the columnar cotton on the melted thread receiving rod into the threaded sleeve before the columnar cotton closely fits the inner threads of the threaded sleeve.

8. The apparatus for manufacturing liquid storage cotton according to claim 7, wherein the moving assembly comprises: a moving track provided on the baseplate, and a moving arm located on the moving track; the moving arm comprises: a first air cylinder, a second air cylinder, a third air cylinder and a clamping finger; the first air cylinder is configured to allow the clamping finger to extend to columnar cotton on the melted thread receiving rod before the columnar cotton on the melted thread receiving rod closely fits the inner threads of the threaded sleeve; the third air cylinder is configured to allow the clamping finger to clamp the columnar cotton when the clamping finger moves to the columnar cotton; the second air cylinder is configured to allow the clamping finger to move towards the threaded sleeve when the clamping finger clamps the columnar cotton, such that the columnar cotton closely fits the inner threads of the threaded sleeve; when the columnar cotton is moved by the clamping finger to closely fit the inner threads of the threaded sleeve, the columnar cotton is released by the clamping finger via the third air cylinder; when the columnar cotton is released by the clamping finger, the first air cylinder allows the clamping finger to retract away from the columnar cotton; and when the clamping finger retracts away from the columnar cotton, the second air cylinder allows the clamping finger to move away from the threaded sleeve.

9. The apparatus for manufacturing liquid storage cotton according to claim 8, wherein the moving arm is further provided with a sliding track, a connecting block and a moving base; the moving base is located in the moving track; and the connecting block is located in the sliding track for connecting the clamping finger and the moving base.

10. The apparatus for manufacturing liquid storage cotton according to claim 1, wherein the apparatus for manufacturing liquid storage cotton further comprises a rolling component; and the rolling component is configured to roll the columnar cotton detached from the melted thread receiving rod.

11. The apparatus for manufacturing liquid storage cotton according to claim 10, wherein the rolling component comprises: a plurality of rollers, and a roller supporting block for supporting the rollers; and when the columnar cotton already moved by the threaded sleeve moves into the rolling component, the roller closely fits the columnar cotton to move synchronously.

12. The apparatus for manufacturing liquid storage cotton according to claim 10, further comprising a receiving groove, and a fixing block for fixing the receiving groove; wherein the receiving groove is configured to receive columnar cotton detached from the melted thread receiving rod; and the receiving groove is configured to deliver the columnar cotton to the rolling component.

13. The apparatus for manufacturing liquid storage cotton according to claim 1, wherein the melt-blown cotton receiving device is further provided with a first connecting component for connecting the melted thread receiving rod and the first power device; the first connecting component is provided with a first gear, a first hollow shaft, a first bearing for fixing the first hollow shaft, and a first bearing seat for accommodating the first bearing; and the first gear is mounted on the first hollow shaft, the first hollow shaft is mounted on the first bearing, and the first bearing is mounted on the first bearing seat, and the connecting section of the melted thread receiving rod is connected to the first hollow shaft; the connecting component is further provided with a second gear, and the first power device is connected to the second gear; and the connecting component is further provided with a first conveyor belt, the first conveyor belt is rotated about the first gear and the second gear for rotating the first gear as the second gear rotates.

14. The apparatus for manufacturing liquid storage cotton according to claim 1, wherein the detaching assembly is further provided with a second connecting component for connecting the threaded sleeve and the second power device; the second connecting component is further provided with a third gear, a second hollow shaft, a second bearing for fixing the second hollow shaft, and a second bearing seat configured to accommodate the second bearing; the third gear is mounted on the second hollow shaft, the second hollow shaft is mounted on the second bearing, and the second bearing is mounted on the second bearing seat, and the threaded sleeve is connected to the second bearing;
the second hollow shaft is further configured to fix the threaded sleeve, the second hollow shaft is located between the second bearing and the threaded sleeve, and closely fits each of them; the second connecting component is further provided with a fourth gear, and the second power device is connected to the fourth gear; and the second connecting component is further provided with a second conveyor belt; the second conveyor belt is rotated about the third gear and the fourth gear for rotating the third gear as the fourth gear rotates.

15. The apparatus for manufacturing liquid storage cotton according to claim 1, wherein an outer circumferential surface of the receiving section is not provided with external threads.

16. The apparatus for manufacturing liquid storage cotton according to claim 5, wherein each of cross sections of the receiving section at different positions along an axial direction thereof is of a convex polygonal shape.

17. The apparatus for manufacturing liquid storage cotton according to claim 1, wherein the apparatus for manufacturing liquid storage cotton further comprises a cooling device, the melted thread receiving rod is a metal rod, and a cooling channel is provided in the metal rod in an axial direction of the metal rod, the melted thread receiving rod is cooled by the cooling device via the cooling channel.

18. The apparatus for manufacturing liquid storage cotton according to claim 1, wherein the threaded sleeve is a half-threaded sleeve.

19. The apparatus for manufacturing liquid storage cotton according to claim 2, wherein the apparatus for manufacturing liquid storage cotton is further provided with a baseplate for fixing the melt-blown device, the melt-blown cotton receiving device and the detaching assembly; and the apparatus for manufacturing liquid storage cotton further comprises a moving assembly, which is configured to move the melted thread receiving rod and the first power device when the columnar cotton is formed by the melted threads on the melted thread receiving rod.

20. The apparatus for manufacturing liquid storage cotton according to claim 3, wherein the apparatus for manufacturing liquid storage cotton is further provided with a baseplate for fixing the melt-blown device, the melt-blown cotton receiving device and the detaching assembly; and the apparatus for manufacturing liquid storage cotton further comprises a moving assembly, which is configured to move the melted thread receiving rod and the first power device when the columnar cotton is formed by the melted threads on the melted thread receiving rod.

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