Rotary Paper Processing Device and Rotation Method Thereof

Technical Field

The present invention relates to a paper sheet processing device, and more particularly to a rotary paper processing device.

Background Technology

In the prior art, the basic structure of a paper processing machine is a machine head for cutting and shredding paper, wherein a motor is powered to drive the cutter of a machine head to cut and shred the paper, the shredded paper falls into a container below the machine head, after the shredded paper becomes garbage, it is processed again, thus preventing some confidential documents from being leaked. In a current paper processing device, the cut shredded paper is piled up under the machine head to form a wedge-shaped arch, when the shredded paper reaches the shredding position of the machine head, and the shredded paper will block the machine head and be rolled up again by the rotating cutter of the machine head. However, the space in the shredded paper container is still large, resulting in a technical defect of low space utilization of the shredded paper container, which has become a technical problem that needs to be solved urgently by those skilled in the art.

Summary of the Invention

The technical purpose of the present invention is to overcome the technical problems in the prior art of waste paper processing devices, such as the stacking of shredded pieces after cutting, which affects the normal falling of subsequent shredded paper, and the shredded paper is re-rolled up by the shredder, which affects the normal use of the machine, and to provide a rotary paper processing device that can evenly distribute the shredded paper in a shredded paper container while shredding.

In order to achieve the above technical objectives, the technical solution of the present invention is:

A rotary paper processing device comprises a paper shredder group, wherein the paper shredder group is driven by a motor and arranged in a surface cover, a shell is arranged below the surface cover, inside the shell is arranged a rotary container, and a rotating device is arranged below the rotary container.

Further, the rotating device comprises a base, an air pump is arranged in the base, the air pump is connected to lifting airbags in the base through air supply pipes, a turntable lifting seat is arranged above the lifting airbags, the motor is arranged on the turntable lifting seat, the motor is connected to a turntable shaft of a turntable, on outer periphery of the turntable are arranged pulleys, and above the turntable is arranged a rotary container.

Furthermore, limiting blocks are arranged below the turntable lifting seat and above the base.

Furthermore, below the rotary container is provided a slot, and the slot is provided on the turntable at a bottom portion of the shell.

Furthermore, a motor gear is arranged on a motor shaft of the motor, a transmission gear is arranged below the rotary container, the transmission gear is meshed with the motor gear, and the motor drives the rotary container to rotate.

Furthermore, a motor shaft of the motor is provided with a motor pulley, a container pulley is arranged below the rotary container, the container pulley is connected to the motor pulley through a transmission belt, and the motor drives the rotary container to rotate through the transmission belt.

Furthermore, a transmission shaft is arranged on a motor shaft of the motor, and a fixed shaft is arranged below the rotary container, both end portions of the transmission shaft are respectively fixed to the fixed shaft and the motor shaft, and the motor drives the rotary container to rotate through the transmission shaft.

Furthermore, pulleys are provided below the rotary container, and the pulleys slide in an annular sliding groove at a bottom portion of the shell.

A rotation method of the rotary paper processing device comprising following steps of:

A. rotating the rotary container clockwise while shredding paper;

B. pausing and rotating the rotary container counterclockwise;

C. performing step A intermittently and step B intermittently; and, performing step A and step B alternately; and in the step A and the step B, the rotary paper processing device pauses for 1-5 seconds after every 15 degrees of rotation and then continues to rotate.

The beneficial technical effect of the present invention is that by providing a rotary container and a rotating device under the rotary container, the container containing shredded paper can be rotated when paper is shredded, and intermittent rotation and clockwise and counterclockwise alternating rotation can make the shredded paper evenly stacked in the container, thereby maximizing the use of the space of the container.

Brief Description of the Drawings

Figure 1 is a schematic diagram of transmission gear and motor gear structure of an embodiment of the present invention.

Figure 2 is a schematic diagram of belt transmission structure of an embodiment of the present invention.

Figure 3 is a schematic diagram of transmission shaft structure of an embodiment of the

present invention.

Figure 4 is a schematic structural diagram of an embodiment of the present invention.

Specific Embodiments

Embodiments of the present invention are described in detail in combination with figures 1 to 4, which however do not make t any limitation on the claims.

In an embodiment of the present invention, a rotary paper processing device comprises a frame and a paper shredder group 104 arranged on the frame, the paper shredder group 104 is driven by a motor, the paper shredder group 104 is arranged in a surface cover 102, below the surface cover 102 is arranged a shell, inside the shell is provided a rotary container 103, below the rotary container 103 is provided a rotating device; when implemented, the rotating device comprises a turntable 220, below the rotary container 103 is provided a slot, the slot is provided on the turntable at a bottom portion of the shell; the rotating device comprises a base 100, an air pump 110 is arranged in the base 100, the air pump 110 is connected to lifting airbags 105 in the base 100 through air supply pipes, a turntable lifting seat 101 is arranged above the lifting airbags 105, the motor 201 is arranged on the turntable lifting seat 101, the motor 201 is connected to a turntable shaft of the turntable 220, on outer periphery of the turntable 220 are arranged pulleys 221, and above the turntable 220 is arranged the rotary container 103, and above the rotary container 103 is arranged a paper shredder group 104. Limiting blocks are arranged below the turntable lifting seat 101 and above the base 100. The rotary container 103 is used to hold the shredded paper cut by the shredder group 104. When in use, the rotary container 103 is placed on a top portion of the turntable 220 and clamped, a power switch is turned on, the air pump 110 works, and supplies air to the lifting airbags 105 through air pipes; when the lifting airbags 105 lift the turntable lifting seat 101 to the highest point, a machine indicator light shows that the paper can be shredded; the paper is put into a paper mouth, a sensor senses and starts to shred the paper, and the motor 201 rotates, driving the turntable 220 and the rotary container 103 stuck on the turntable 220 to rotate; in this process, the outer periphery of the turntable 220 is provided with pulleys 221 to ensure the smooth transportation of the rotary container 103 above the turntable 220; when the shredded paper is full, the machine stops working, the machine indicator light reminds that the shredded paper is full, the air pump 110 exhausts, and the lifting airbags 105 descend, and the machine prompts that the rotary container 103 can be taken out. During implementation, an air intake port of the air pump 110 is connected to a bottom portion of the rotary container 103 through a rotary sealing interface. When in use, the air pump 110 draws air to form a negative pressure at the bottom of the rotary container 103, so that the shredded paper is better adsorbed to the bottom of the rotary container 103. During implementation, the air pump 110 intermittently inflates and deflates the rotary container 103 to vibrate up and down, so that the shredded paper is arranged more evenly. In one embodiment, in order to achieve a slight tilt rotation of the rotary container 103, opposed pulleys 221 can be pulleys of different diameters to achieve a more even arrangement of the shredded paper. In an embodiment, a motor gear 202 is arranged on a motor shaft of the motor 201, a transmission gear 2021 is arranged below the rotary container 103, the

transmission gear 2021 is meshed with the motor gear 202, and the motor 201 drives the rotary container 103 to rotate. In another embodiment, a motor shaft of the motor 201 is provided with a motor pulley 203, a container pulley 204 is arranged below the rotary container 103, the container pulley 204 is connected to the motor pulley 203 through a transmission belt 205, and the motor 201 drives the rotary container 103 to rotate through the transmission belt 205. In another embodiment, a transmission shaft 210 is arranged on a motor shaft of the motor 201, and a fixed shaft is arranged below the rotary container 103, both end portions of the transmission shaft 210 are respectively fixed to the fixed shaft and the motor shaft, and the motor 103 drives the rotary container 103 to rotate through the transmission shaft 210. Furthermore, pulleys 221 are provided below the rotary container 103, and the pulleys 221 slide in an annular sliding groove at a bottom portion of the shell.

The present invention provides a rotation method of the rotary paper processing device comprising following steps of: rotating the rotary container 103 clockwise while shredding paper, intermittently; pausing and rotating the rotary container 103 counterclockwise, intermittently; and rotating the rotary container 103 counterclockwise and clockwise alternately; during implementation, the rotary container 103 is rotated counterclockwise, and then pauses for 1-5 seconds after every 15-degree rotation; the rotary container 103 is rotated clockwise or counterclockwise, and then pauses for 1-5 seconds after every 15-degree rotation. This rotation method can achieve a good technical effect of evenly scattering shredded paper. The rotary container 103 in this method refers to a rotary container 103 that can accommodate shredded paper.

The present invention can realize the rotation of the rotary container 103 during shredding by providing a rotating device below the rotary container 103, so that the shredded paper is evenly stacked in the rotary container 103, thereby making maximum use of the space of the rotary container 103.

CLAIMS

1. A rotary paper processing device, characterized in comprising a paper shredder group, wherein the paper shredder group is driven by a motor and arranged in a surface cover, a shell is arranged below the surface cover, inside the shell is arranged a rotary container, and a rotating device is arranged below the rotary container.

2. The rotary paper processing device according to claim 1, characterized in that the rotating device comprises a base, an air pump is arranged in the base, the air pump is connected to lifting airbags in the base through air supply pipes, a turntable lifting seat is arranged above the lifting airbags, the motor is arranged on the turntable lifting seat and is connected to a turntable shaft of a turntable, on outer periphery of the turntable are arranged pulleys, and above the turntable is arranged the rotary container

3. The rotary paper processing device according to claim 2, characterized in that limiting blocks are arranged below the turntable lifting seat and above the base.

4. The rotary paper processing device according to claim 1, characterized in that below the shredded paper container is provided a slot, and the slot is provided on the turntable at a bottom portion of the shell .

5. The rotary paper processing device according to claim 1, characterized in that a motor gear is arranged on a motor shaft of the motor, a transmission gear is arranged below the rotary container, the transmission gear is meshed with the motor gear, and the motor drives the rotary container to rotate.

6. The rotary paper processing device according to claim 1, characterized in that a motor shaft of the motor is provided with a motor pulley, a container pulley is arranged below the rotary container, the container pulley is connected to the motor pulley through a transmission belt, and the motor drives the rotary container to rotate through the transmission belt.

7. The rotary paper processing device according to claim 1, characterized in a transmission shaft is arranged on a motor shaft of the motor, and a fixed shaft is arranged below the rotary container, both end portions of the transmission shaft are respectively fixed to the fixed shaft and the motor shaft, and the motor drives the rotary container to rotate through the transmission shaft.

8. The rotary paper processing device according to claim 1, characterized in that pulleys are provided below the rotary container, and the pulleys slide in an annular sliding groove at a bottom portion of the shell.

9. A rotation method of the rotary paper processing device according to any of claims 1-8, characterized in comprising following steps of:

A. rotating the shredding container clockwise while shredding paper;

B. pausing and rotating the shredding container counterclockwise;

C. performing step A intermittently and step B intermittently; and, performing step A and step B alternately.

10. The rotation method of the rotary paper processing device according to claim 9, characterized in that in the step A and the step B, the rotary paper processing device pauses for 1-5 seconds after every 15 degrees of rotation and then continues to rotate.