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SOAKING AND RINSING DEVICE FOR DEGREASING COTTON.

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The disclosure discloses a soaking, rinsing device for degreasing cotton, comprising a support column, a work table fixedly connected to a top of the support column, a storage box fixedly connected to a top of the work table, a drainage pipe connected to a rear side of the storage box, a tossing mechanism provided in the storage box to facilitate a tumbling of degreasing cotton to soak more thoroughly. The storage box, the tossing mechanism in the storage box is provided, the tossing mechanism includes the rotating shaft, and thus, the turning plate rotates through the rotating shaft to toss the degreasing cotton in the storage box, so that the degreasing cotton is soaked or cleaned more thoroughly and the soaking and cleaning effect is improved; a plurality of holes are opened on the turning plate to facilitate the flow of excess liquid when tossing, reducing the resistance of tossing.

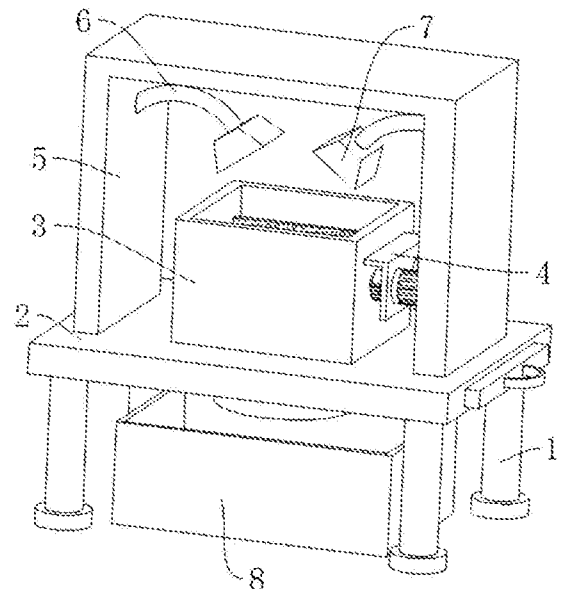


Fig.1

DESCRIPTION

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SOAKING AND RINSING DEVICE FOR DEGREASING COTTON**TECHNICAL FIELD**

[0001] The disclosure relates to the technical field of degreasing cotton production, and in particular to a soaking and rinsing device for degreasing cotton.

BACKGROUND ART

[0002] Degreasing cotton is a cotton chemically treated to remove fat, which is made from raw cotton by removing inclusions, degreasing, bleaching, washing, drying, finishing processing. It is easier than ordinary cotton to absorb liquid, is a medical and health supplies, and also used to manufacture nitrocellulose. However, degreasing cotton needs to be soaked and rinsed in the process of processing, and the common soaking solution is mainly ethanol, hydrochloric acid water, etc.

[0003] After retrieving the patents, a Chinese patent of No. CN217726413U provides a soaking and rinsing device for degreasing cotton production and processing. The device of the patent has a simple and compact structure, is easy to use, and can achieve full soaking of cotton by using the reciprocating movement of hydraulic pushing plate, which improves the degreasing effect of cotton; and it can rinse and dewater for many times after soaking, and has a high degree of automation, which is suitable for promotion and use.

[0004] However, when there is more degreasing cotton, the degreasing cotton in the middle part of the container is not easy to be soaked, and the degreasing cotton will be pressed more compactly in the process of constant downward pressure of the pressure plate, which is not conducive to the soaking of the degreasing cotton in the middle part, resulting in a poor soaking effect.

DISCLOSURE

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[0005] It is an object of the present disclosure to provide a soaking and rinsing device for degreasing cotton in order to solve the above problems.

[0006] The present disclosure achieves the above purpose by the following technical solution.

[0007] The disclosure provides a soaking and rinsing device for degreasing cotton, comprising a support column, a work table fixedly connected to a top of the support column, a storage box fixedly connected to a top of the work table, a drainage pipe connected to a rear side of the storage box, and a tossing mechanism provided in the storage box to facilitate a tumbling of degreasing cotton to soak more thoroughly and including a rotating shaft rotatably connected between inner walls of the storage box and a plurality of turning plates with holes fixedly connected on the rotating shaft.

[0008] Preferably, the tossing mechanism further comprises a power assembly for driving the rotating shaft, in which the power assembly comprises a mounting plate, the mounting plate is fixedly connected to one side of the storage box, a first motor is fixedly connected to one side of the mounting plate, a first half-gear is fixedly connected to an output end of the first motor, a second motor is fixedly connected to one side of the mounting plate with a opposite rotation direction to the first motor, a second half-gear is fixedly connected to an output end of the second motor, and one end of the rotating shaft extends from the storage box and is fixedly connected with a full gear meshing with the first half-gear and the second half-gear.

[0009] Preferably, a support plate is fixedly connected to the top of the work table, and two connecting pipes are symmetrically connected to two inner sides of the support plate, and a nozzle is fixedly connected to an end of the connecting pipe away from the support plate.

[0010] Preferably, a drop hole is opened at the top of the work table, a sliding groove is opened at an inside of the work table, a baffle plate is slidingly connected in the sliding groove, a discharge pipe is connected to a bottom of the work table, and a collection box is provided on a ground below the discharge pipe.

[0011] The advantageous effect is as follows. The storage box and the tossing mechanism in the storage box is provided, and the tossing mechanism includes the rotating shaft, and thus, the turning plate rotates through the rotating shaft to toss the

degreasing cotton in the storage box, so that the degreasing cotton is soaked or cleaned more thoroughly and the soaking and cleaning effect is improved; a plurality of holes are opened on the turning plate to facilitate the flow of excess liquid when tossing, reducing the resistance of tossing, and reducing the energy waste rate; and by driving the rotating shaft through the power assembly to drive the turning plate to make regular forward and reverse rotation, the uniformity of soaking or cleaning of the degreasing cotton is improved. LU504198

[0012] Additional technical features of the present disclosure and its advantages will be more obvious in the following description, or can be understood through the specific practice of the present disclosure.

BRIEF DESCRIPTION OF DRAWINGS

[0013] The accompanying drawings are for exemplary illustration only and are not to be construed as limiting the disclosure; certain parts of the accompanying drawings are omitted, enlarged or reduced for the purpose of better illustrating this embodiment and do not represent the dimensions of the actual product; it is understandable to those skilled in the art that certain well-known structures in the accompanying drawings and their descriptions may be omitted.

[0014] FIG. 1 is a schematic diagram of a soaking and rinsing device for degreasing cotton as described in the present disclosure;

[0015] FIG. 2 is a front view of the internal structure of a soaking and rinsing device for degreasing cotton described in the present disclosure;

[0016] FIG. 3 is a right view of a storage box of a soaking and rinsing device for degreasing cotton described in the present disclosure;

[0017] FIG. 4 is an upper view of the storage box of a soaking and rinsing device for degreasing cotton described in the present disclosure;

[0018] FIG. 5 is a schematic diagram of the turning plate of a soaking and rinsing device for degreasing cotton as described in the present disclosure.

[0019] Reference numbers: 1, support column; 2, work table; 201, baffle plate; 202, discharge pipe; 3, storage box; 301, drainage pipe; 4, tossing mechanism; 401, mounting

plate; 402, first motor; 403, first half-gear; 404, second motor; 405, second half-gear; 406, rotating shaft; 407, full gear; 408, turning plate; 5, support plate; 6, connecting pipe; 7, nozzle; 8, collection box. LU504198

Best Mode

[0020] In order to enable those skilled in the art to better understand the scheme of the disclosure, the technical solutions in the embodiments of the disclosure will be clearly and completely described below in conjunction with the accompanying drawings in the embodiments of the disclosure, and it is clear that the embodiments described are only some of the embodiments of the disclosure, and not all of them. Based on the embodiments in the disclosure, all other embodiments obtained by those skilled in the art without making creative labor shall fall within the scope of protection of the disclosure.

[0021] In the description of the disclosure, it is to be understood that the terms indicating orientation or positional relationships such as "center", "longitudinal", "transverse", "length", "width", "thickness", "upper", "lower", "front", "back", "left", "right", "vertical", "horizontal", "top", "bottom", "inside", "outside", "clockwise", "counter clockwise", "axial", "radial", "circumferential" and the like are based on the orientation or positional relationships shown in the accompanying drawings, and are intended only to facilitate and simplify the description of the disclosure, not to indicate or imply that the device or element referred to must have a particular orientation, be constructed and operate in a particular orientation, and therefore are not to limit the disclosure.

[0022] Furthermore, the terms "first" and "second" are used for descriptive purposes only and are not to be understood as indicating or implying relative importance or as implicitly specifying the number of technical features indicated. Thus, the features qualified with "first" and "second" may explicitly or implicitly include at least one such feature. In the description of the disclosure, "plurality" means at least two, such as two, three, etc., unless otherwise expressly and specifically limited.

[0023] In the disclosure, unless otherwise expressly specified and limited, the terms "mounted", "attached", "connected", "fixed", etc. shall be used in a broad sense, e.g., they may be fixed connections, or removable connections, or in one piece; they may be mechanical connections, or electrical connections or communicable with each other; they may be directly connected, or indirectly connected through an intermediate medium, and they may be a connection within two elements or an interactive relationship between two elements, unless otherwise expressly limited. To those skilled in the art, the specific

meaning of the above terms in the context of the disclosure can be understood on a case-by-case basis. LU504198

[0024] The disclosure is further described below in connection with the accompanying drawings.

[0025] As shown in Figs.1-5, the disclosure provides a soaking and rinsing device for degreasing cotton, comprising a support column 1, in which a rubber pad is provided on the bottom of the support column 1, a work table 2 is welded to a top of the support column 1, a drop hole is opened at a top of the work table 2, a sliding groove is opened at an inside of the work table 2, a baffle plate 201 is slidingly connected in the sliding groove to cover the drop hole and extends from the work table 2, a semi-circular pull ring for pulling the baffle plate 201 is welded to the baffle plate 201, a discharge pipe 202 is connected to the bottom of the work table 2, a collection box 8 is placed on the ground below the discharge pipe 202, a storage box 3 is bolted to the top of the work table 2, a drainage pipe 301 is connected to the rear side of the storage box 3, a control valve is provided in the drainage pipe 301, and the bottom of the storage box 3 is connected to the discharge pipe 202.

[0026] The storage box 3 is provided with a tossing mechanism 4 that facilitates the tossing of the degreasing cotton to soak more thoroughly, the tossing mechanism 4 includes a mounting plate 401, the mounting plate 401 is bolted to one side of the storage box 3, one side of the mounting plate 401 is bolted to a first motor 402, the output end of the first motor 402 is fixedly connected to a first half-gear 403, one side of the mounting plate 401 is bolted to a second motor 404 having an opposite rotating direction to the first motor, the output end of the second motor 404 is fixedly connected with the second half-gear 405, a rotating shaft 406 is rotatably connected between the inner walls of the storage box 3, one end of the rotating shaft 406 extends from the storage box 3 and is fixedly connected with a full gear 407 that engages with the first half-gear 403 and the second half-gear 405 and is between the first half-gear 403 and the second half-gear 405. gear 407, a plurality of turning plates 408 are fixedly connected to the rotating shaft 406, and a plurality of holes are opened in the turning plates 408 for reducing the resistance to flipping.

[0027] The top of the work table 2 is bolted to a support plate 5, and the two inner sides of the support plate 5 are symmetrically connected with two connecting pipes 6, one of which is used to convey soaking liquid and the other is used to convey clear water, and

the ends of the connecting pipes 6 away from the support plate 5 are fixedly connected with a nozzle 7 facing the storage box 3, and the other ends of the two connecting pipes 6 are connected with the boxes for storing soaking liquid and clear water respectively, and a pump is provided inside the box, through which the soaking solution or clear water is delivered to the nozzle 7 through the connecting pipe 6. LU504198

[0028] Working principle is as follows. In the present disclosure, firstly, the degreasing cotton is put into the storage box 3, the soaking liquid is added into the storage box 3 through one of the nozzles 7, meanwhile, the first motor 402 and the second motor 404 are started, the first motor 402 drives the first half-gear 403 to rotate, the second motor 404 drives the second half-gear 405 to rotate. When half teeth of the first half-gear 403 engage with the full gear 407, the full gear 407 drives the rotating shaft 406 to rotate, the rotating shaft 406 drives the turning plate 408 to turn the degreasing cotton in the storage box 3 to improve the surface area of the degreasing cotton in contact with the soaking liquid, so that the degreasing cotton is soaked more evenly and thoroughly; and when the half teeth of the first half-gear 403 turn away, half teeth of the second half-gear 405 just engage with the full gear 407, thus driving the full gear 407 to drive the rotating shaft 406 reversal. Through the constantly positive and negative rotation of the turning plate 408 driven by the rotating shaft 406, the degreasing cotton soaked more evenly. When soaking is over, the control valve in the drain 301 is opened to discharge the soaking liquid, then, the control valve is closed, through another nozzle 7 to add water to the storage box 3 to clean the degreasing cotton, at the same time, the rotating shaft 406 will still drive the turning plate 408 to rotate repeatedly to clean the degreasing cotton more thoroughly. After cleaning for a period of time, the control valve is opened to drain the water, and after several cycles, pull the baffle plate 201, so that the cleaned degreasing cotton in the storage box 3 falls into the collection box 8 through the discharge pipe 202.

[0029] Obviously, the above embodiments of the disclosure are merely examples made to clearly illustrate the disclosure and are not meant to limit the manner in which the disclosure can be implemented. For those skilled in the art, other variations or changes in different forms can be made on the basis of the above description. It is not necessary or possible to exhaust all embodiments here. Any modifications, equivalent substitutions, improvements, etc. made within the spirit and principles of the disclosure shall be included within the scope of protection of the claims of the disclosure.

CLAIMS

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1. A soaking and rinsing device for degreasing cotton, comprising a support column, a work table fixedly connected to a top of the support column, a storage box fixedly connected to a top of the work table, a drainage pipe connected to a rear side of the storage box, and a tossing mechanism provided in the storage box to facilitate a tumbling of degreasing cotton to soak more thoroughly and including a rotating shaft rotatably connected between inner walls of the storage box and a plurality of turning plates with holes fixedly connected on the rotating shaft.

2. The soaking and rinsing device for degreasing cotton of claim 1, wherein the tossing mechanism further comprises a power assembly for driving the rotating shaft, in which the power assembly comprises a mounting plate, the mounting plate is fixedly connected to one side of the storage box, a first motor is fixedly connected to one side of the mounting plate, a first half-gear is fixedly connected to an output end of the first motor, a second motor is fixedly connected to one side of the mounting plate with a opposite rotation direction to the first motor, a second half-gear is fixedly connected to an output end of the second motor, and one end of the rotating shaft extends from the storage box and is fixedly connected with a full gear meshing with the first half-gear and the second half-gear.

3. The soaking and rinsing device for degreasing cotton of claim 1, wherein a support plate is fixedly connected to the top of the work table, and two connecting pipes are symmetrically connected to two inner sides of the support plate, and a nozzle is fixedly connected to an end of the connecting pipe away from the support plate.

4. The soaking and rinsing device for degreasing cotton of claim 1, wherein a drop hole is opened at the top of the work table, a sliding groove is opened at an inside of the work table, a baffle plate is slidingly connected in the sliding groove, a discharge pipe is connected to a bottom of the work table, and a collection box is provided on a ground below the discharge pipe.

REVENDEICATIONS

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1. Un dispositif de rinçage par immersion de coton écrémé, y compris une colonne de support, le haut de la colonne de support est relié de façon fixe à un établi, en haut de l'établi est fixée une boîte de stockage, la face arrière de la boîte de stockage est reliée à un tuyau de drainage, qui se caractérise comme suit: la boîte de stockage est munie d'un mécanisme de mélange qui facilite le retournement du coton écrémé pour le faire tremper plus complètement, le mécanisme de mélange comprend un arbre rotatif installée de façon tournante entre les parois intérieures de la boîte de stockage, et l'arbre rotatif est munie d'une pluralité de rabats avec des trous.

2. Dispositif de rinçage par immersion de coton écrémé selon la revendication 1, qui se caractérise comme suit: le mécanisme de mélange comprend en outre un ensemble de puissance pour entraîner la rotation de l'arbre de rotation, l'ensemble de puissance comprend une plaque de montage, la plaque de montage est connectée de façon fixe à un côté de la boîte de stockage, un côté de la plaque de montage est relié de façon fixe à un premier moteur, l'extrémité de sortie du premier moteur est reliée de façon fixe à un premier demi-engrenage, un côté de la plaque de montage est relié de façon fixe à un deuxième moteur qui se tourne en sens inverse par rapport du premier moteur, l'extrémité de sortie du deuxième moteur est reliée de façon fixe à un deuxième demi-engrenage, l'extrémité de l'arbre rotatif qui s'étend hors de la boîte de stockage est reliée de façon fixe à un engrenage complet maillé avec le premier demi-engrenage et le deuxième demi-engrenage.

3. Dispositif de rinçage par immersion de coton écrémé selon la revendication 1, qui se caractérise comme suit: le dessus de l'établi est relié de façon fixe à une plaque de support, et aux deux côtés intérieurs de la plaque de support sont reliés symétriquement deux tuyaux de connexion, et les tuyaux de connexion sont munis d'une buse à l'extrémité éloignée de la plaque de support.

4. Dispositif de rinçage par immersion de coton écrémé selon la revendication 1, qui se caractérise comme suit : le haut de la table est muni d'un trou d'alimentation, l'intérieur de la table est muni d'une goulotte, à l'intérieur de la goulotte est reliée de façon glissante un déflecteur, le bas de l'établi est relié à un tuyau de décharge et une boîte de collecte est placée sur le sol sous le tuyau de décharge.

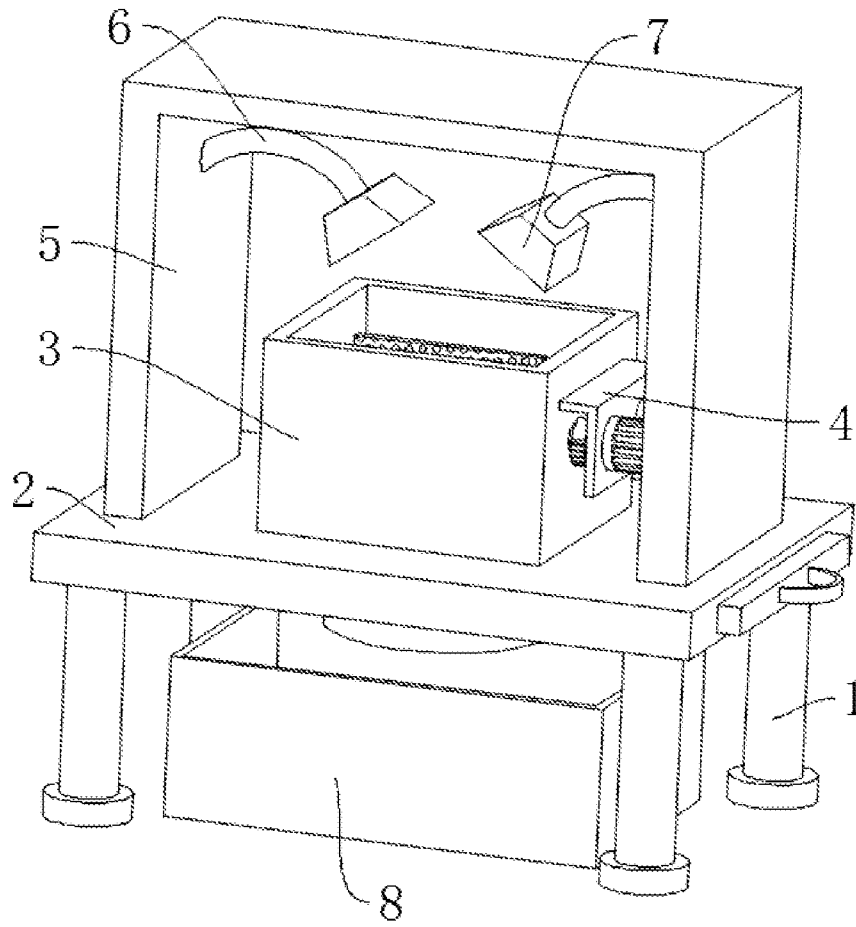


Fig.1

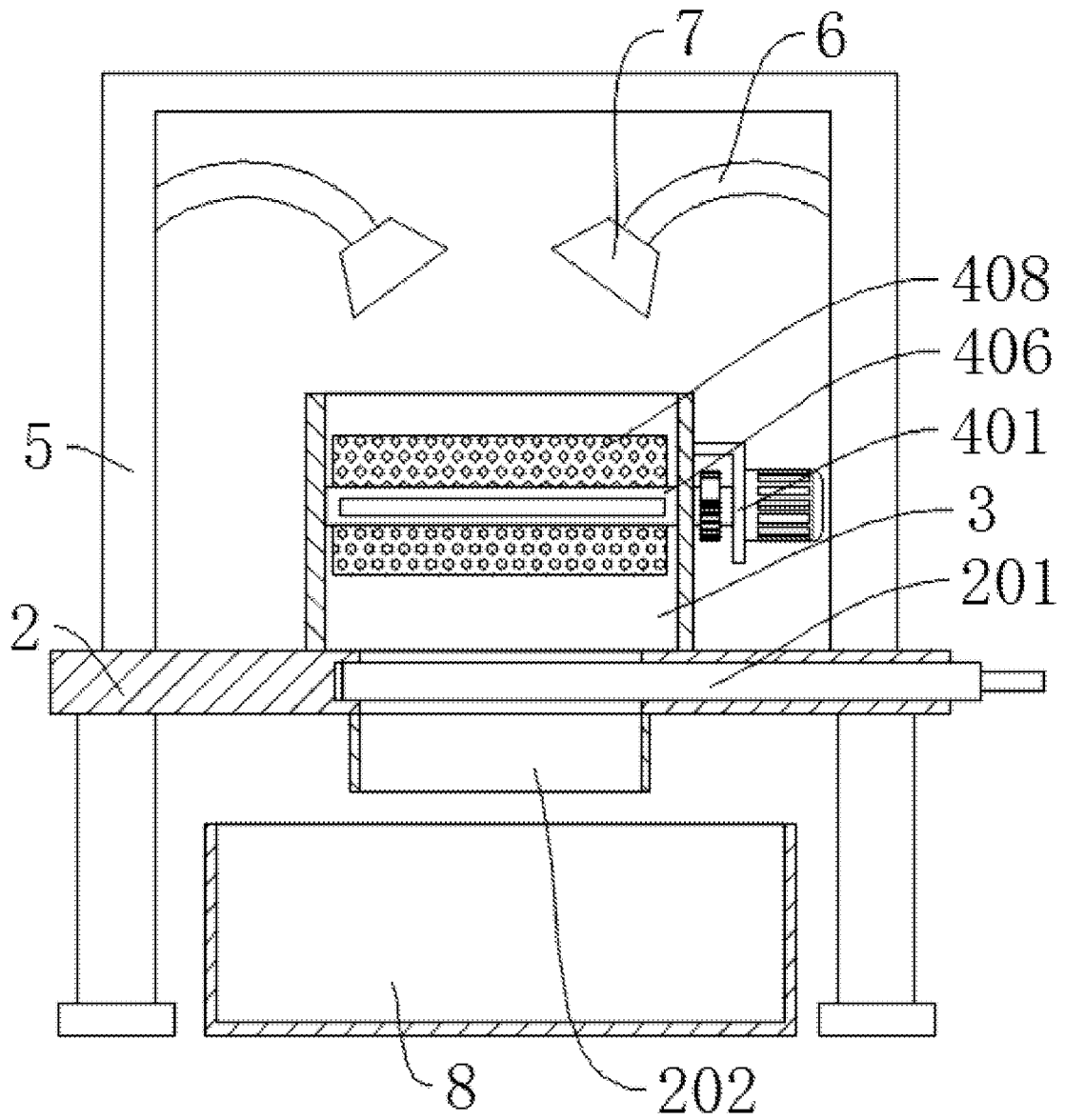


Fig.2

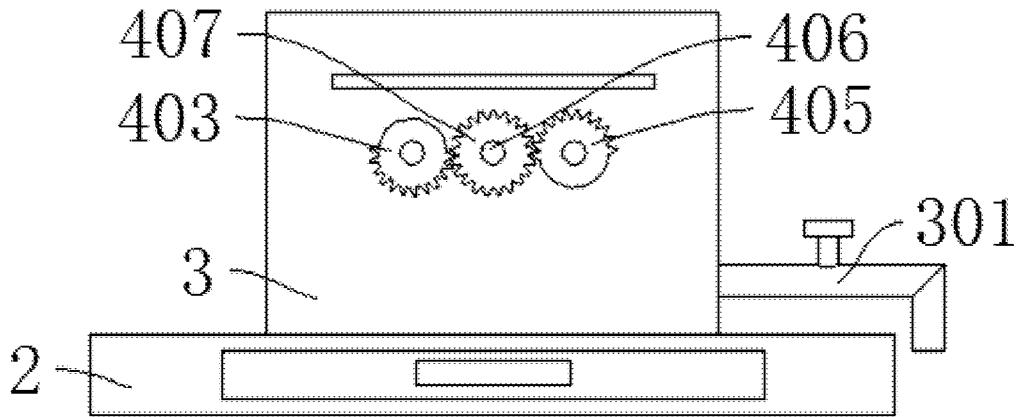


Fig.3

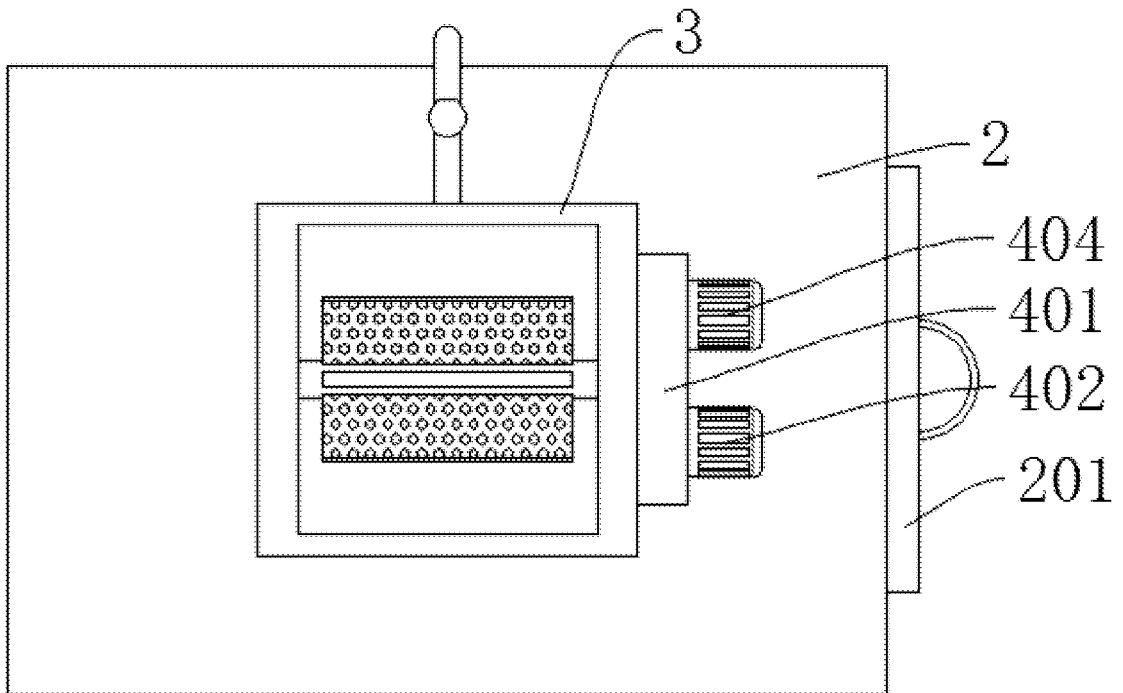


Fig.4

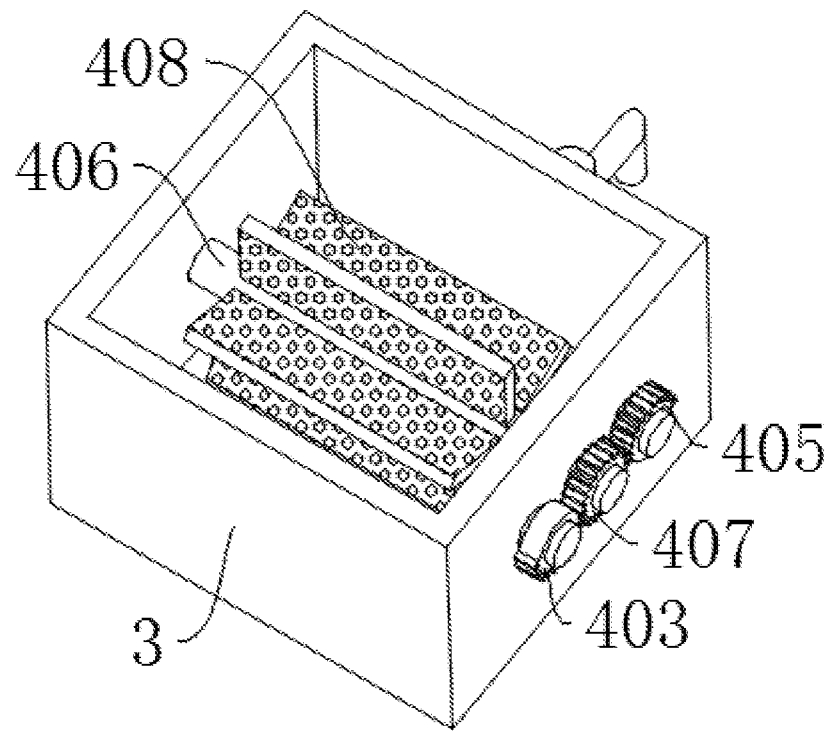


Fig.5