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DESCRIPTION CN2764601

The utility model provides a slag juice extracting machine, which comprises a screw shaft, a filtrate box and a discharge head, wherein the spiral axis is an unequal pitch and an unequal bottom diameter structure, and the pitch gradually decreases along the axial direction, and then gradually increases. Large, the bottom diameter gradually increases along the axial direction; the filtrate tank is a grid-like structure, and the side wall is provided with a thread of a mesh joint and an inner spiral structure; the screw shaft passes through the filtrate tank in the axial direction and is connected with the discharge head. The utility model is capable of squeezing the sisal residue by the auxiliary cooperation of the rotating shaft with the filtrate box and the discharging head, extracting and separating the juice and the fiber yarn from the same; and automatically adjusting the discharging through the discharging head and the pressure spring. The size of the mouth prevents blockage. Compared with the traditional drum type or screw extrusion equipment, the utility model has the advantages of reasonable structure, small volume, low energy consumption, high recovery fiber and juice amount, no damage to the fiber, and can greatly improve the sisal fiber. Yield.

Hemp juice machine

Technical field

The utility model relates to a sisal fiber processing device, in particular to a device for extracting and separating the juice liquid and the fiber yarn from the dregs.

Background technique

The existing slag fiber processing equipment mainly uses a drum type and a screw extrusion apparatus to press and separate the juice from the slag. Among them, the drum type equipment has a large volume, low yield, and the amount of juice extracted is small, the fiber green skin is not loose enough, and there are many water stains, which restricts the output of the entire production line. In contrast, the screw-squeezing device can extract more juice and increase the yield. However, the spiral axis of the existing screw-squeezing device has an equal pitch, or the pitch gradually decreases, or the bottom diameter, or the bottom diameter. The structure is gradually increased, and the filtrate device is a box composed of a filter plate or a filtrate hole, which is easily blocked.

For example, the Chinese utility model patent (ZL 95231227.1) of CN 2239885Y published on November 13, 1996 discloses a screw extrusion filter plate dewatering machine comprising a screw propeller and a dewatering device composed of a filter plate for potato Dry powder processing of hydrated materials such as slag, distiller's grains and bagasse. However, the auger and the dewatering device in the dehydrator work independently, that is, the material is sent to the dewatering device by the screw propeller, the material is squeezed and dehydrated in the dewatering device, and the auger is equidistant. The isobaric structure, the dewatering device is composed of a plurality of filter plates and baffles, and is suitable for dehydrating dry powder or granular materials. Since the sisal fiber filaments are easily entangled with each other, it is difficult to pass the dewatering device similar to the patent CN 2239885Y, which easily causes the passage blockage, thereby hindering the normal operation of the dehydrator.

Summary of the invention

In view of the above problems, the utility model provides a slag juice extracting machine, which adopts a mechanical structure combining a screw extrusion device and a mesh format filtrate device, and extracts and separates the juice and the fiber filament from the sisal residue, and the structure thereof is reasonable. The volume is small, the amount of recycled fiber and juice is high, and the fiber is not damaged.

The technical scheme adopted by the utility model is as follows: a hemp squeezing juice machine comprising a screw shaft, a filtrate box and a discharge head, wherein the spiral shaft has an unequal pitch and an unequal bottom diameter structure, and the pitch thereof is along the axis. Gradually decrease gradually, then gradually increase, and the bottom diameter gradually increases along the axial direction; the filtrate tank is a grid-like structure, and the side wall is provided with a thread of a mesh joint and an inner spiral structure; the screw shaft is axially filtered. The tank is connected to the discharge head.

The spiral shaft includes a main shaft, a counter shaft and a spiral blade, and the main shaft and the counter shaft are concentric shafts, and the main shaft passes through the filtrate tank and the discharge head to rotate in the axial direction; the bottom diameter of the counter shaft gradually increases to the end in the axial direction. It

will remain unchanged in the future.

One end of the discharge head is a circular arc surface, and is provided with a groove to engage with the end of the counter shaft; the other end is connected with an elastic or pressure device.

The main shaft of the rotating shaft is connected to the power unit.

The utility model can squeeze the sisal residue by the auxiliary cooperation of the rotating shaft with the filtrate box and the discharge head, and the juice and the fiber filament can be extracted and separated therefrom. Among them, the rotating shaft adopts special unequal pitch and unequal bottom diameter structure, the pitch of the rotating shaft is gradually reduced first, then gradually increases, and the bottom diameter is gradually increased; and the mesh box of the filtrate box is combined to produce a pressing effect, so that sisal During the process of being pushed and squeezed, the pressure of the slag is continuously increased, which is more conducive to extruding the juice therein; and a discharge head is arranged at the discharge port, when the discharge in the filtrate tank increases, The discharge head compresses the spring, so that the discharge port increases, and conversely, the discharge port is reduced, that is, through the discharge head and the pressure spring, the size of the discharge port can be automatically adjusted according to the discharge amount to prevent sisal fiber. The blockage phenomenon, while achieving the effect of re-extruding the filtrate.

Compared with the traditional drum type or screw extrusion equipment, the utility model has the advantages of reasonable structure, small volume, low energy consumption, high recovery fiber and juice amount, no damage to the fiber, and can greatly improve the sisal fiber. Yield.

DRAWINGS

Figure 1 is a schematic view of the structure of the present invention;

Figure 2 is a schematic view showing the structure of the screw of the present invention;

Figure 3 (a) is a structural view of the discharge box of the present invention;

Figure 3 (b) is a cross-sectional view taken along line A-A of Figure 3 (a);

Fig. 3(c) is an enlarged view of a portion B in Fig. 3(b).

Detailed ways

As shown in Figure 1, a slag juicer consists of a base 1, a motor 2, a speed reducer 4, a feed bin 6, a screw shaft 7, a filtrate tank 8, a discharge port 9, a discharge head 10, and a spring 11 and a lock nut 12, wherein the motor 2 is connected to the speed reducer 4 via the elastic cylindrical coupling 3, and then connected to the front end of the screw shaft 7 through the chain type coupling 5; There is a feeding box 6, the screw shaft 7 is axially passed through the filtrate tank 8 and one end of the discharging head 10, and the other end of the discharging head 10 is connected with the spring 11, and the spring 11 can be changed by adjusting the lock nut 12. For the pressure of the discharge head 10, the size of the discharge port 9 is adjusted. The motor 2, the speed reducer 4, the feed bin 6, and the filtrate tank 8 are all fixed to the base 1.

As shown in FIG. 2, the spiral shaft structure of the slag juicer of the present invention is composed of a main shaft 71, a counter shaft 72 and a spiral blade 73. The main shaft 71 and the counter shaft 72 are concentric shafts. A blade 73 having an outer spiral structure is provided on the circumference of the main shaft 71, and the pitch of the screw shaft 7 (i.e., the interval between the adjacent two spiral blades 73) and the bottom diameter of the counter shaft 72 are axially changed. The pitch of the pitch gradually decreases along the axial direction (ie, from the feeding end to the discharge end), and then gradually increases, as shown in the figure: $d_1 > d_2$, $d_2 < d_3$; the bottom diameter of the countershaft 72 is along the axis Gradually (i.e., from the feed end to the discharge end) gradually increases to the end, and remains unchanged thereafter, as shown in the figure: the bottom diameter of the W1 section of the countershaft 72 gradually increases in the axial direction, forming a cone In the shape, the bottom diameter of the W2 section remains unchanged and is cylindrical; and the main shaft 71 and the counter shaft 72 have a hollow structure. As shown in the figure, the discharge ram 10 is processed into a circular tapered surface structure, and a groove is provided at one end of the tapered surface, and the end of the secondary shaft 72 is sleeved therein and engaged with the clearance, and the main shaft 71 passes through Discharge head 10 .

3(a), 3(b), and 3(c), the schematic diagram of the filtrate tank structure of the slag juicer of the present invention, the filtrate tank 8 is a grid-like cylindrical structure, and the side plate is 83 and the ring 84 are welded, an elongated mesh joint 81 is left between the adjacent side plates 83, and an inner spiral thread 82 is provided on the inner side wall (may be a steel strip welded to the inner side wall, etc.) Increase the friction of the inner side wall to prevent the sisal from slipping during the advancement process, which is not conducive to advancement; when the sisal residue is squeezed in the filtrate tank 8, the juice can be filtered out through the mesh slit 81, and the fiber does not follow It escapes.

The working principle of the slag juice extracting machine of the utility model is as follows: when the sisal residue is added into the feeding box 6, under the action of the screw shaft 7, the sisal slag moves toward the discharge port 9 and then enters Filtrate tank 8, in the filtrate tank 8, the sisal slag is squeezed by the screw shaft 7 and the filtrate tank 8, and the juice can be extracted, filtered out through the mesh slit 81 on the side wall of the filtrate tank 8, and the sword The hemp fiber cannot escape from the mesh slit 81 and continues to advance toward the discharge port 9. Since the pitch of the screw shaft 7 (i.e., the spacing between the adjacent two spiral blades 73) is gradually decreased in the axial direction (i.e., from the feeding end to the discharge end), it gradually increases, and the secondary shaft The bottom diameter of 72 gradually increases in the axial direction (ie, from the feed end to the discharge end), so that the pressure of the sisal in the filtrate tank 8 is gradually increased, which is more conducive to squeezing the juice in the dregs. Out. Finally, the sisal fiber obtained by squeezing the filtrate is advanced to the discharge port 9 and sent out from the discharge port 9. Wherein, the size of the discharge port 9 is controlled by the discharge head 10, and when the discharge in the filtrate tank 8 is increased, the discharge head 10 compresses the spring 11 so that the discharge port 9 is increased, and conversely, the discharge port 9 is reduced, and the size of the discharge port 9 can be automatically adjusted by the discharge head 10 and the pressure spring 11 to prevent the sisal fiber from clogging.

In the utility model, the power device of the screw shaft 7 is composed of a motor 2 and a speed reducer 4. The model of the motor 2 is Y-160L-6, the power is 11KW, the type of the reducer 4 is ZQ500-31.5-II, and the transmission ratio is 31.5. .