Oct. 6, 1931. H. DABBS 1,826,602

STRIPPER SPINDLE

Filed April 26, 1928

FIG. 1.

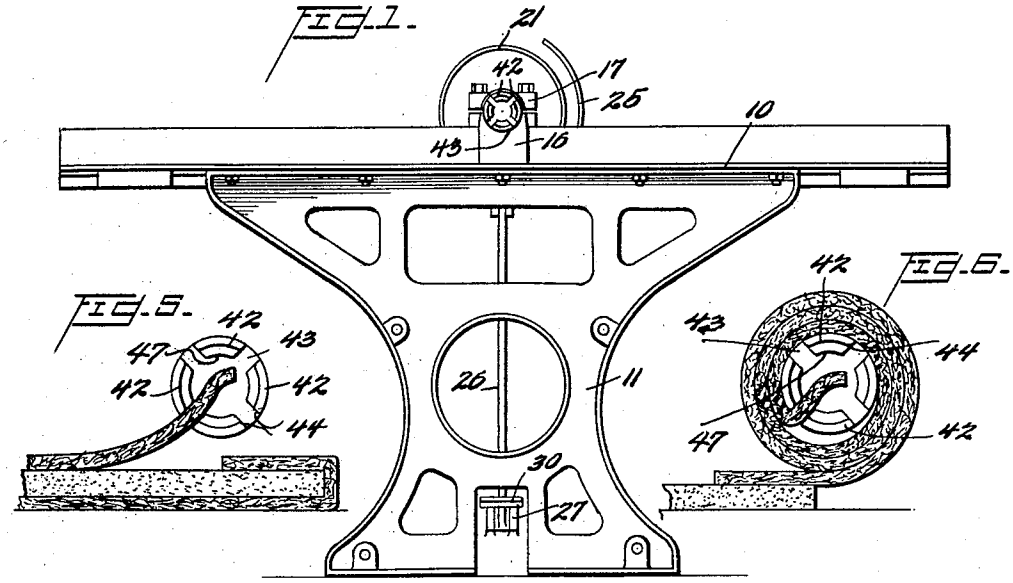


FIG. 5.

FIG. 6.

FIG. 2.

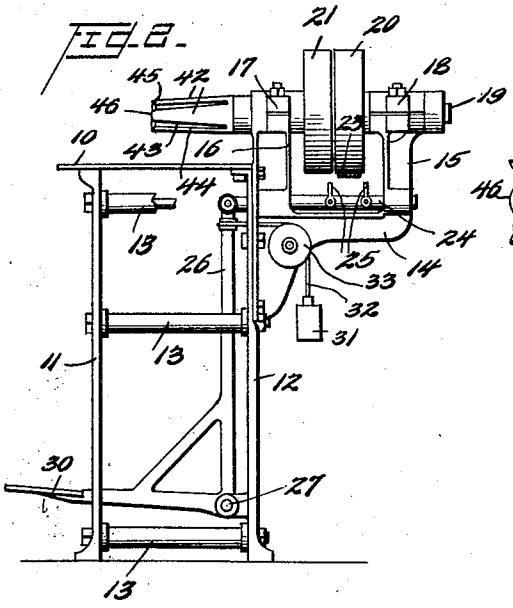


FIG. 3.

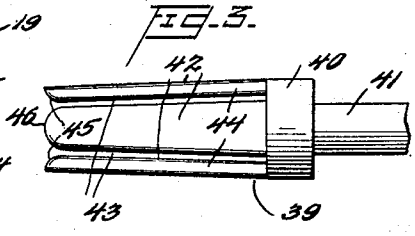
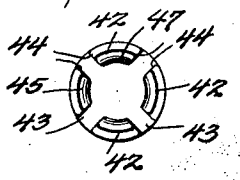


FIG. 4.



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UNITED STATES PATENT OFFICE

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STRIPPER SPINDLE

Application filed April 26, 1928. Serial No. 273,138.

This invention relates to stripper spindles, and more particularly to the type adapted for the stripping of cloth from compressed cotton seed cakes after the oil has been extracted therefrom, or from other compressed cakes.

In the manufacture of cotton seed oil, after the cotton has been ginned, the seed crushed and the kernels or meats taken out of the seed hull, the meats are ground up and put through a cooking process. Small quantities of the cooked ground meats are then wrapped up in a cloth, and placed in a machine in which the oil is extracted by hydraulic pressure. In this process the cloth is so embedded in the cake that it is difficult of removal. The same difficulty occurs in linseed oil manufacture, and other processes involving compressing a cake in a cloth wrapper.

In order to strip the cloths mechanically, it has been proposed to wind them upon a spindle and various spindles for gripping the cloth to wind it into a roll have been developed. However the prior spindles have not been satisfactory, inasmuch as the hooks or sharp edges employed for gripping the cloth subject it to such wear and tear that these cloths are deteriorated very rapidly. The cake cloth itself has involved a serious problem, and expensive materials such as camel's hair are the only ones that have proved satisfactory. Hence rapid deterioration of the cake cloth is an expensive item in the process.

It is therefore the principal object of my invention to provide a stripper spindle for the purpose described, which will operate with a minimum amount of mutilation of the cake cloth during the stripping process.

It is a further object of my invention to provide a stripper spindle which will permit very simple and rapid insertion of the end of the cloth to be wound, as well as removal of the wound roll.

It is a specific object of the invention to provide a stripper spindle with cloth gripping surfaces having large bearing areas.

Other objects and features of novelty will be apparent from the following description when taken in connection with the accompanying drawings, in which one embodiment of my invention is illustrated by way of example.

Fig. 1 is a front view of a machine in which the stripper spindle embodying the principles of my invention is mounted for use;

Fig. 2 is an end view of the structure shown in Fig. 1;

Fig. 3 is a detail elevation of the stripper spindle according to my invention;

Fig. 4 is an end view of the spindle shown in Fig. 3;

Fig. 5 is a diagrammatic view showing the cloth inserted in the spindle preparatory to the stripping operation; and

Fig. 6 shows the cloth wound on the spindle at the end of the stripping process.

Referring more particularly to the drawings, the invention is illustrated as mounted in a machine comprising a bed 10 supported by frame members 11 and 12 which are braced by cross members 13. At the rear of the machine a bracket 14 is mounted, carrying upstanding arms 15 and 16 in which are mounted bearings 17 and 18. A shaft 19 is journaled in the bearings and carries a fixed pulley 20 keyed to the shaft and a free pulley 21 adjacent thereto. The pulleys are of the same diameter and a belt 23 driven from a source of power, not shown, is adapted to be shifted laterally from one pulley to the other by means of a belt shifter 24.

The belt shifter comprises a horizontally slidable arm 24 guided in the bracket 14 and carrying upstanding lugs 25 which guide the belt 23 therebetween. The end of the member 24 is pivoted to one arm of a bell crank lever 26 pivoted to the rear frame member 12 as at 27. The other arm of the bell crank lever 26 terminates in an operating foot pedal 30, which, when depressed, will serve to shift the lever to the keyed pulley 21. When the pedal 30 is released, a weight 31 suspended from a cord 32 passing over pulley 33 and secured to the other arm of the bell crank lever, automatically actuates the belt shifting mechanism to return the belt 23 to the idler pulley 20.

The structure described above is merely illustrative of the known mounting and drive

for use with the improved spindle, and forms no part of the invention.

The stripper spindle is of hollow conical formation provided with slots in which the end of the cloth may be inserted, to grip it so that the cloth may be wound on the spindle. In the form shown, the spindle is indicated generally at 39, and comprises a head 40 rigid with a shaft 41 which may be integral with the shaft 19 or driven therefrom in any desired manner. Secured to or integral with the head 40 are tongues 42 extending therefrom in converging relationship, and spaced from each other a distance sufficient to hold the end of the cloth therebetween by wedging action. The slot 43 between adjacent tongues is parallel to the axis of the spindle, and as shown in Fig. 4, the edges 44 are substantially flat and the material is comparatively thick, so that a wide bearing area is produced for gripping the cloth. The ends of the slots at the smaller end of the conical spindle are flared outwardly as at 45, rounding off the ends 46 of the tongues. This arrangement permits the ready axial insertion of the end of the cloth.

As shown in Fig. 4, the tongues 42 have concave inner surfaces 47 and confine a substantially conical space which receives the inner end of the cloth, so that the end cannot interfere with the smooth winding of the roll of cloth on the spindle. Smooth winding of the roll is also facilitated, and mutilation of the cloth prevented, by rounding off the corners of the flat gripping edges 44, which does not decrease the wide bearing area thereof appreciably.

The spindle is preferably constructed of relatively thick rigid material, and the cloth is wedged between the tongues and held by the elasticity of the cloth itself. However it is within the purview of my invention to make the tongues or the entire spindle of slightly elastic material, so that the tongues as well as the cloth may yield when the cloth is inserted, and hold the end of the cloth by the combined elasticity of the cloth and the spindle.

In operation the cotton seed cake with its embedded cloth is placed on the bed 10, and one end of the cloth is freed by hand and inserted in the spindle as shown in Fig. 5. The flared ends 45 of the slots permit the end of the cloth to be readily inserted axially between a pair of adjacent tongues 42. When the pedal 30 is depressed the driven belt will be shipped from the free pulley to the keyed pulley 21, thus driving the shaft 19 and the head 40, winding the cloth on the spindle in a compact roll as shown in Fig. 6. When the cloth has been stripped from the cake the conical shape of the spindle permits the entire roll of cloth to be removed bodily by a lateral movement, withdrawing the inner end of the cloth from the space between the tongues 42.

While one embodiment of my invention has been shown and described in comparative detail, the invention is not limited to the details shown, but includes such embodiments of the broad idea as come within the scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A stripper spindle for stripping cloths from compressed cakes comprising a head having a plurality of tongues secured thereto and extending therefrom in converging relation, said tongues being spaced from each other a distance to clamp by wedge action a cloth inserted therebetween, the adjacent edges of said tongues being smooth and relatively wide to prevent mutilating the cloth, and the outer ends of the tongues being rounded to facilitate insertion of the cloth, the converging relation of the tongues permitting the ready removal of cloth wound thereon.

2. A stripper spindle for stripping cloths from compressed cakes comprising a hollow frusto-conical member open at its smaller end and slitted parallel to its axis forming a slot of a width to clamp cloth inserted therein, the end of the slot at the smaller end of the member being flared to facilitate insertion of the cloth, and the conical formation permitting ready removal of cloth wound thereon, said member being of rigid, non-resilient construction.

3. A stripper spindle for stripping cloths from compressed cakes comprising a hollow frusto-conical member open at its smaller end and slitted parallel to its axis forming a slot of a width to clamp cloth inserted therein, the end of the slot at the smaller end of the member being flared to facilitate insertion of the cloth, and the conical formation permitting ready removal of cloth wound thereon, said member having a relatively thick wall, whereby a wide bearing area is provided for the cloth gripping sides of the slot so that mutilation of the cloth is prevented.

4. A fabric winding spindle comprising a hollow frusto-conical member having a relatively thick wall, said wall being provided with a plurality of slots of such width as to clamp fabric inserted therein, the meeting edges of the surfaces of said slots and the inner and outer surfaces of said wall being rounded to protect and facilitate entry of said fabric in said slots.

5. A stripper spindle for stripping cloths from compressed cakes comprising a hollow frusto-conical member open at its smaller end and slitted parallel to its axis forming a slot of a width to clamp cloth inserted therein, the end of the slot at the smaller end of the member being flared to facilitate insertion of the cloth, and the conical formation permit-

ting ready removal of cloth wound thereon, said member being constructed of rigid, non-resilient material and having a relatively thick wall, whereby a wide bearing area is provided for the cloth gripping sides of the slot so that mutilation of the cloth is prevented.

In testimony whereof I hereunto affix my signature.

HARRY DABBS.