

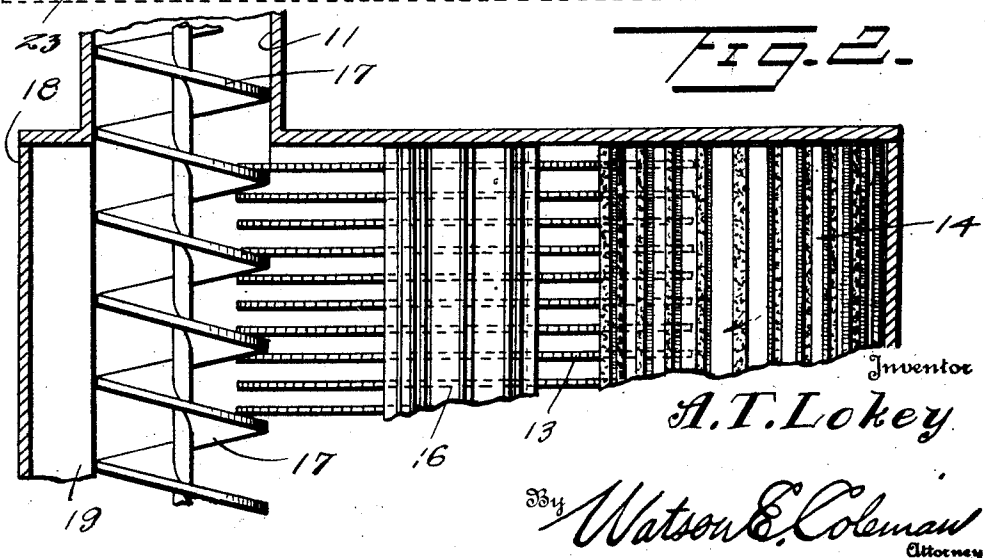
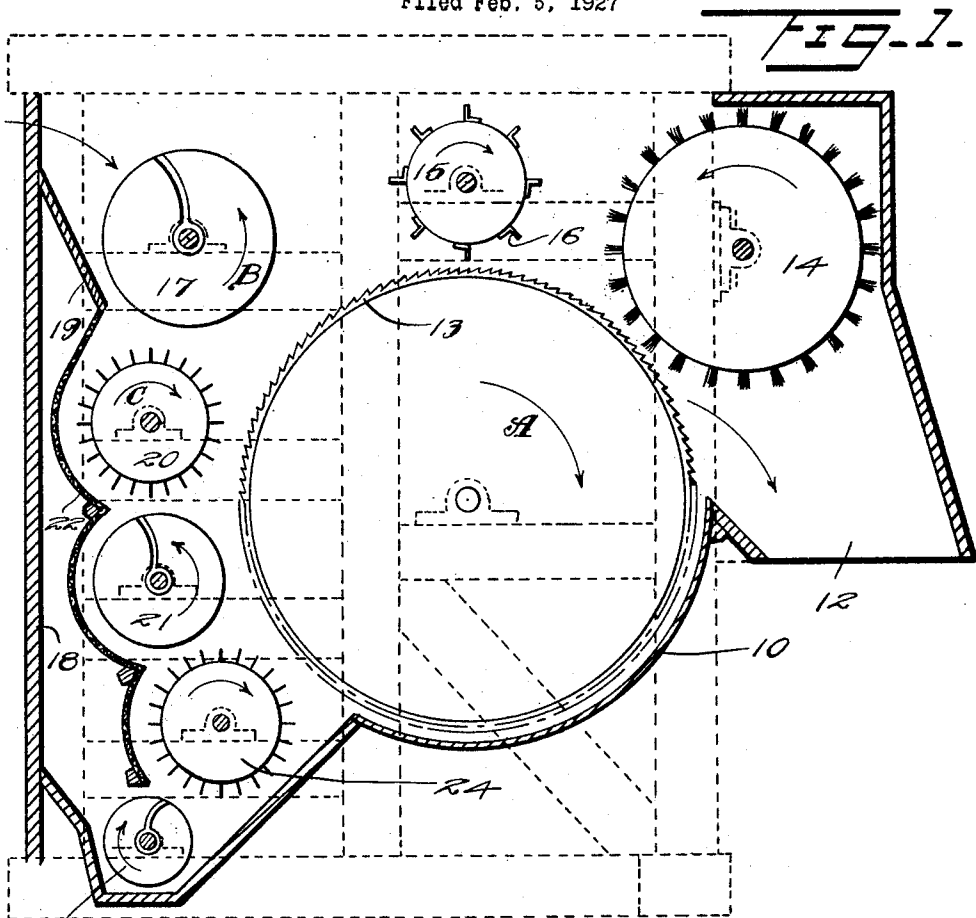
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A. T. LOKEY

COTTON BOLL CLEANING MACHINE

Filed Feb. 5, 1927



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COTTON-BOLL-CLEANING MACHINE.

Application filed February 5, 1927. Serial No. 166,216.

This invention relates to cotton boll cleaning machines and more particularly to a device for removing from cotton the burs, trash and other foreign matter, with the exception of seeds.

An important object of the invention is the provision of a structure wherein the choking or jamming of the cleaning mechanism common to structures of this character is eliminated.

A still further object of the invention is to provide a device of this character which is particularly effective in removing the dirt, trash and the like, so that the cotton may be delivered directly to the gin, if so desired.

A still further object of the invention is to improve the structure of my prior Patent, No. 1,351,858, granted September 7, 1920, for cotton boll cleaning machine, to eliminate the necessity for employing two sets of saws without reducing the actual output of the machine.

These and other objects I attain by the construction shown in the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a vertical sectional view through a cotton cleaning machine constructed in accordance with my invention;

Figure 2 is a fragmentary horizontal sectional view therethrough.

Referring now more particularly to the drawings, the numeral 10 generally designates a casing including a feed hopper 11 opening into the main compartment of the casing. The casing further includes an outlet 12. Rotatably mounted within the casing is a group of saws 13 rotating in the direction of the arrow A, so that the upper portion of the periphery thereof is moving toward the outlet 12. Above the outlet and adjacent the periphery of the saw group is the usual cleaning brush 14 rotating in the opposite direction from the saws 13, as indicated by the arrow and at a higher speed than the saws, so that cotton is disengaged from the teeth of the saws and discharged through the outlet. Vertically above the saw group is arranged a knocker roll 15, which is preferably constructed in accordance with the directions of the patent above identified. This roll has flanges 16, which extend adjacent the peripheries of the saw and the roll is rotated in the opposite direction from the

direction of rotation of the saws, so that burs clinging to the cotton, which adheres to the teeth of the saws, are knocked therefrom and permitted to the discharge, hereinafter described.

Extending from the bottom of the hopper through the casing is a cotton feed screw 17, which rotates in the direction of the arrow B, so that its upper surface is moving in a direction away from the vertical plane including the axis of the saw group 13. This groove thus serves to direct cotton downwardly and toward the adjacent wall 18 of the casing. An inclined board 19 moves the cotton inwardly from the wall, so that this cotton is delivered to the teeth of the spike cylinder 20, which rotates in the direction of the arrow C, so that adjacent portions of its periphery and of the periphery of the saw group are moving in opposite directions. This spike drum forces the cotton against the periphery of the drum, causing the cotton to be gathered by the teeth of the saws and carried about the periphery of the group. Because of the opposition of movement of adjacent surfaces of the spike drum and saws, the cotton bolls are separated and the burs broken, so that they are readily detached therefrom. The spike drum further serves as a means for agitating the cotton, so as to permit any contained dirt to pass therefrom.

The structure so far described constitutes normal cotton cleaning structure. In accordance with my invention, I arrange beneath the spike drum 20 a second screw conveyor 21 rotating in the same direction as the screw conveyor 17 and accordingly tending to move the cotton transversely of the saw group in the same manner. This conveyor and the spike drum thereabove urge the cotton toward a foraminous false wall 22 which is slightly spaced from the wall 18, so that a chute is provided, by means of which dirt, bits of burs, sticks and the like are directed downwardly to a discharge conveyor 23. Below the screw conveyor 21 a second spike drum 24 is disposed, which rotates in the same direction as the spike drum 20 and performs the same offices. It will be obvious that excess material which would tend to jam the operation of the machine and which has a tendency to collect adjacent the inlet end of the conveyor 17 will be delivered by the spike drum 20 to the conveyor

21 and by this conveyor will be distributed toward the face of the saw group. In this manner, jamming of the machine is prevented, while a considerably greater quantity of material can be handled. The constant agitation to which the cotton is subjected serves to very thoroughly separate therefrom any collected dirt, burs or similar substances which are carried away by the conveyor 23.

It will be noted that the foraminous wall 22 is made in the form of a series of concaves which are substantially concentric to the peripheries of the spike drum 20, conveyor 21 and spike drum 24.

Since the construction hereinbefore set forth is capable of a certain range of change and modification without materially departing from the spirit of the invention, I do not limit myself to such specific structure except as hereinafter claimed.

I claim:—

1. In a cotton boll cleaning machine, a group of rotating concentric saws, a plurality of spike drums axially paralleling the saw group and vertically spaced from one another, a conveyor above each spike drum and delivering cotton thereon and means for rotating the spike drums and saws in the same direction.

2. In a cotton boll cleaning machine, a group of rotating concentric saws, a plurality of spike drums axially paralleling the saw group and vertically spaced from one another, a conveyor above each spike drum and delivering cotton thereon, means for rotating the spike drums and saws in the same direction and a discharge conveyor beneath the lowermost spike drum.

3. In a cotton boll cleaning machine, a group of rotating concentric saws, a plurality of spike drums axially paralleling the saw group and vertically spaced from one another, a screw conveyor above each spike drum axially paralleling the associated spike drum and delivering cotton thereon, means for rotating the spike drums and saws in the same direction and screw conveyors in the opposite direction.

4. In a cotton boll cleaning machine, a group of rotating concentric saws, a plurality of spike drums axially paralleling the saw group and vertically spaced from one another, a screw conveyor above each spike drum axially paralleling the associated spike drum and delivering cotton thereon, means for rotating the spike drums and saws in the same direction, screw conveyors in the opposite direction and a screw conveyor beneath the lowermost spike drum for receiving

trash, burs and the like to discharge the same from the machine.

5. In a cotton boll cleaning machine, a group of rotating concentric saws, a plurality of spike drums axially paralleling the saw group and vertically spaced from one another, a screw conveyor above each spike drum and delivering cotton thereon, means for rotating the spike drums, saws and conveyors, a casing enclosing the saws, drums and conveyors including a wall arranged at the opposite side of the conveyor and drums from the saws and a foraminous false wall between said wall and the conveyors and drums.

6. In a cotton boll cleaning machine, a group of rotating concentric saws, a plurality of spike drums axially paralleling the saw group and vertically spaced from one another, a screw conveyor above each spike drum and delivering cotton thereon, means for rotating the spike drums, saws and conveyors, a casing enclosing the saws, drums and conveyors including a wall arranged at the opposite side of the conveyor and drums from the saws, a foraminous false wall between said wall and the conveyors and drums and a discharge conveyor beneath the lowermost spike drum and in communication with the space between said wall and false wall.

7. In a cotton boll cleaning machine, a group of rotating concentric saws, a plurality of spike drums axially paralleling the saw group and vertically spaced from one another, a screw conveyor above each spike drum and delivering cotton thereon, means for rotating the spike drums, saws and conveyors, a casing enclosing the saws, drums and conveyors including a wall arranged at the opposite side of the conveyor and drums from the saws and a foraminous false wall between said wall and the conveyors and drums, said false wall being in the form of a plurality of concaves each of which is concentric with the spike drum or conveyor with which it coacts.

8. In a cotton boll cleaning machine, a rotatable element having a toothed periphery, a plurality of spike drums axially paralleling the rotatable element and vertically spaced from one another, a conveyor above each spike drum and delivering cotton thereon and means for rotating the spike drum and rotatable element in the same direction.

In testimony whereof I hereunto affix my signature.

ALLEN T. LOKEY.