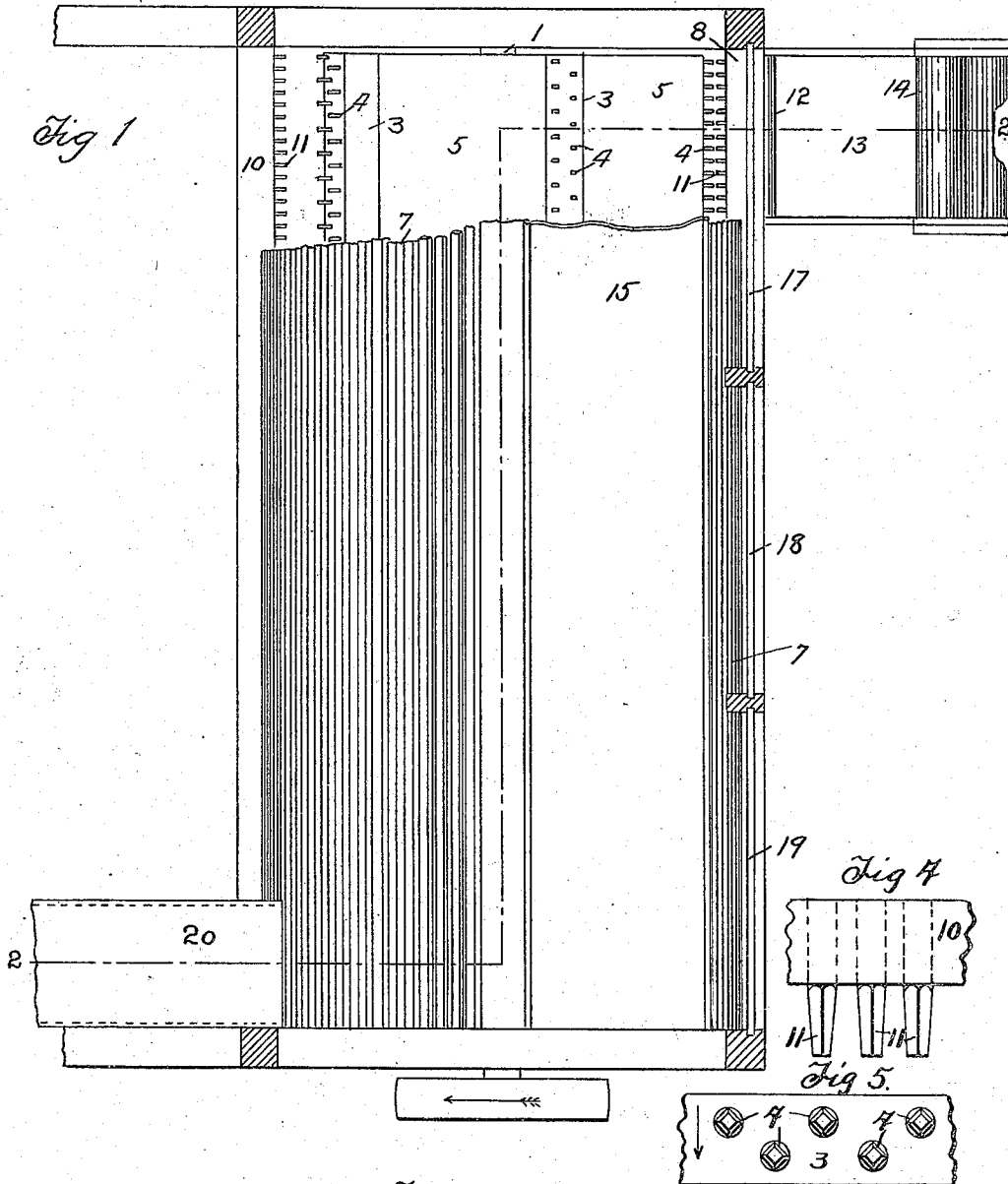


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FIBER CLEANING APPARATUS.
APPLICATION FILED SEPT. 4, 1907.

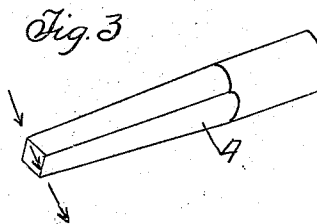
939,569.

Patented Nov. 9, 1909.

2 SHEETS—SHEET 1.



Witnesses
Margaret Walsh
W. B. Heinecke



Inventor

Justin K Toles

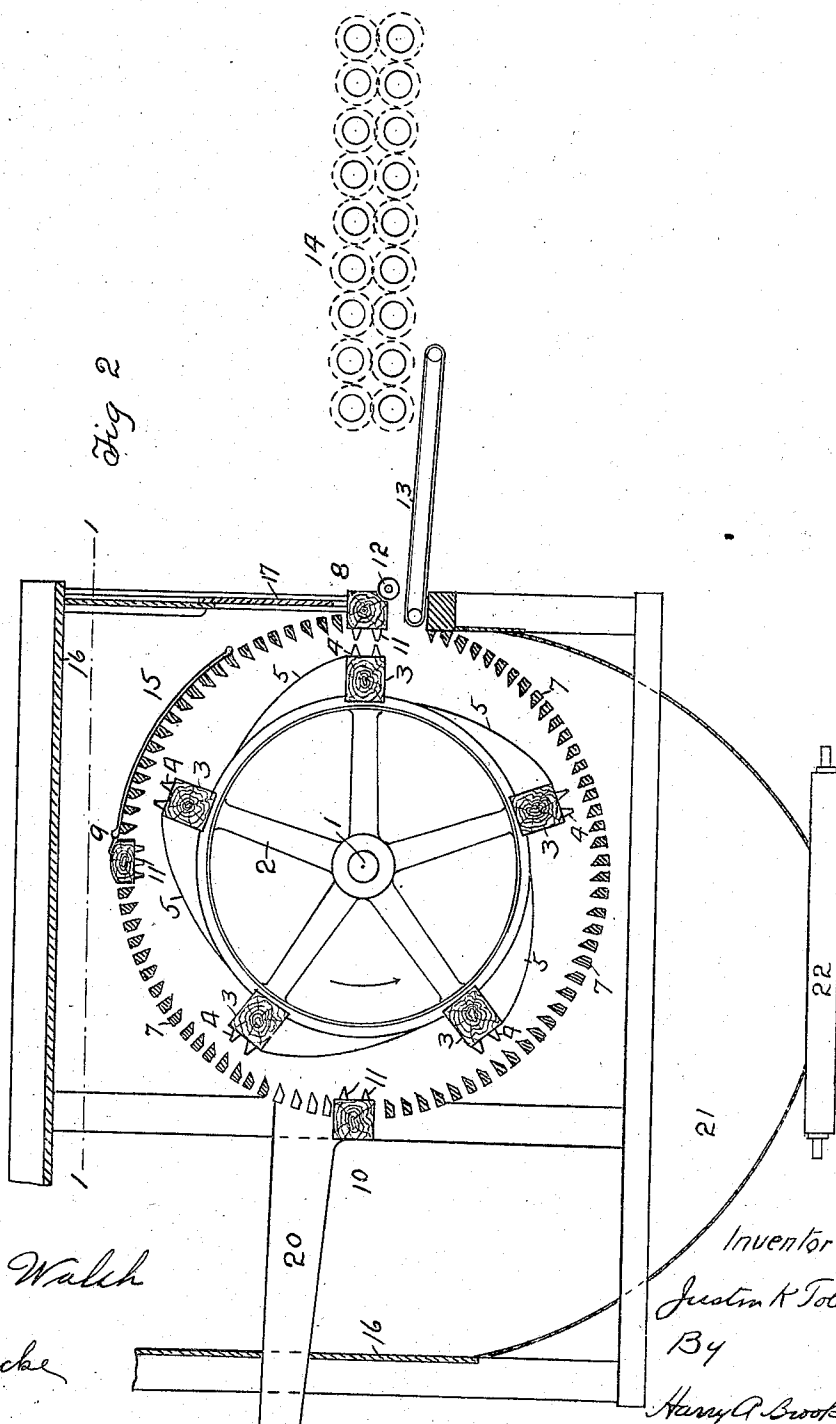
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UNITED STATES PATENT OFFICE.

JUSTIN KAY TOLES, OF LOS ANGELES, CALIFORNIA.

FIBER-CLEANING APPARATUS.

939,569.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed September 4, 1907. Serial No. 391,395.

To all whom it may concern:

Be it known that I, JUSTIN K. TOLES, a citizen of the United States of America, residing at Los Angeles, in the county of Los Angeles, State of California, have invented a certain new and useful Fiber-Cleaning Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an apparatus for cleaning fiber, particularly long fiber such as flax, hemp, etc., and has, among other objects, to provide a machine of this class that will separate the impurities from the fiber, and one in which the breaking of the fibers will be reduced to a minimum.

Some of the features of this invention are: teeth or fingers on the moving member which are in alinement with teeth on the stationary member, said teeth not overlapping each other; a slatted or perforated casing surrounding or partially surrounding the moving member; doors or dampers to control the admission of air through the casing just mentioned; and shields on the rotary member for the purpose to be hereinafter described.

One form of apparatus in which the invention may be embodied, is described herein and illustrated in the accompanying drawings, in which—

Figure 1 is a horizontal section on line 1—1 of Fig. 2. Fig. 2 is a vertical section on line 2—2 of Fig. 1. Fig. 3 is a detailed view of one of the teeth used in this apparatus. Figs. 4 and 5 are detail views showing the arrangement of the teeth.

Reference numeral 1 designates a shaft whereon is mounted a spider 2, carrying beams 3, each of which is provided with teeth 4, preferably of the form shown in Fig. 3. Curved shields 5, are each affixed at one edge to the inner side of one of timbers 3, the other edge being affixed to the outer side of the succeeding timber. Surrounding shaft 1, and the appliances carried by spider 2, is a casing, the major portion of which consists of a plurality of slats 7, the sides of which are beveled so as to pre-

sent a series of sharp edges over the inner surface of the casing as shown in Fig. 2. At each end of the casing a portion of some of the slats is cut away to allow of the admission of the fiber to, and the discharge of the fiber from the casing.

Timbers 8, 9 and 10 are located in positions indicated on the drawing, and carry teeth 11, which may be arranged in one or more rows upon each of said timbers. Teeth 4 and 11 are arranged to present the edge of junction of diverging faces, preferably a V-shape, to the material passing through the machine and are of such length and positioned relatively so that as the shaft 1 is rotated, the ends of teeth 4 pass close to the ends of teeth 11 and substantially in alinement therewith. By such construction and arrangement is secured positive action of the moving teeth on the fiber lodged against the stationary teeth to pull apart the fiber and comb it with a minimum tendency to breaking or tangling or balling the fiber.

A feed roll 12 is carried by timber 8, the fiber being delivered thereto by an endless apron 13 which receives it from a set of breaker rolls 14. A plate 15 which confines the air current in direction and whereby its volume may be regulated is situated on the outside of the slats 7 on the side of the apparatus adjacent to the timber 8 and is supported by hinges attached to timber 9. The plate as thus arranged also serves to prevent the air current from carrying shive and impurities between the slats it covers; it being seen that if shive passed through the slats covered by the plate, it would fall back on the fiber instead of into the hopper hereinafter mentioned.

An outer casing 16, has a series of doors or dampers 17, 18 and 19 for regulating admission of air, which doors are preferably located on the same side of the machine as timber 8. The opposite side of the machine has a delivery spout 20. The lower part of the casing 16 is formed into a hopper 21, beneath which is an endless apron 22 to receive material discharged therefrom.

The mode of operation is as follows: Shaft 1 being rotated in the direction indicated by the arrow (Fig. 2) fiber is fed be-

tween breaker rolls 14, and falls upon endless apron 13 which passes it under feed roll 12 into the casing. Teeth 4 catch the fiber and raise it over the under edge of timber 8, pulling it apart and combing it over teeth 11. It is drawn away from timber 8 by teeth 4 and thrown outwardly against slats 7, shields 5 preventing it from lodging against the forward side of beams 3, air current generated by the rotation and the shape and position of said shields causing the fiber to be thrown outwardly against the edges of slats 7. The sharp edges of the slats scrape and detach the shive and other impurities from the fiber and the air current causes them to be discharged through the spaces between the slats into hopper 21 whence they are conveyed away by draper 22. The fiber travels through the casing in a helical direction, its progress longitudinally being hastened or retarded as desired by opening or closing the doors or dampers 17, 18 and 19.

I do not wish to confine myself to the specific embodiment of my invention herein described nor to the details of construction shown. I desire to have the benefit of such modifications or equivalents as are properly within the spirit of my invention as specified in the following claims.

While a particular description has been given of one form of apparatus embodying the invention, it is to be understood that it is possible to make various changes and modifications, without departing from the principle and scope of the invention.

I claim:

1. In a fiber cleaning apparatus, an outer casing provided with a delivery port, a rotary member, fiber cleaning devices and shields carried thereby, on the periphery thereof, said shields serving to throw fiber away from said rotary member, a casing comprising slats with beveled sides surrounding said rotary member, and a series of dampers to regulate admission of air passing through said casing to said delivery port.

2. In a fiber cleaning apparatus, in combination an outer casing provided with an open port through which cleaned fiber is delivered, a stationary member, a rotary member provided with deflecting shields, fiber cleaning devices carried by each of said members, an apertured casing surrounding said rotary member, said casing provided with scraping means, and means to regulate admission of air passing through said casing to said delivery port.

3. In a fiber cleaning apparatus, in combination, a rotary member and a stationary member, fiber cleaning appliances thereon serving to pull apart and comb the fiber, stationary cleaning appliances comprising slats having projecting edges contiguous to

said rotary member, and curved shields mounted on the periphery of said rotary member, said shields serving to throw fiber against said stationary appliances.

4. In a fiber cleaning apparatus, in combination, a rotary member and a stationary member, fiber cleaning appliances thereon comprising teeth coacting to pull apart and comb the fiber, a plurality of stationary cleaning appliances contiguous to said rotary member, and a plurality of curved shields mounted on the periphery of said rotary member, said shields serving to throw fiber against said stationary appliances.

5. In a fiber cleaning apparatus, a rotary member, fiber cleaning appliances thereon, a plurality of stationary cleaning appliances contiguous to said rotary member, and a plurality of shields mounted on said rotary member, said shields each being substantially in the form of a segment of a spiral and arranged to throw fiber away from said rotary member and against said stationary cleaning appliances.

6. In a fiber cleaning apparatus, a rotary member, an apertured casing comprising scraping means surrounding said member, an outer casing having an open discharge port, means for deflecting fiber against said scraping means, and a series of dampers in said outer casing to control admission of air passing to said port and thereby regulate the progress of the fiber while it is passing through the apparatus to said port.

7. In a fiber cleaning apparatus, a rotary member provided with deflecting shields, a stationary cleaning member surrounding said rotary member, and a plate covering a portion of said stationary member and arranged to confine and direct air currents through the apparatus.

8. In a fiber cleaning apparatus, a rotary member, carrying teeth and deflecting shields, stationary members carrying teeth coacting with the teeth of the rotary member to pull apart and comb fiber, and a series of slats having projecting edges, said rotary and stationary members and slats coacting to remove impurities from the fiber.

9. In a fiber cleaning apparatus, in combination, relatively movable members provided with coacting means for pulling apart and combing fiber, means for scraping and cleaning the same, means for deflecting the fiber against said scraping and cleaning means, and a plate for regulating the volume of air current and for confining and directing said air current through the apparatus.

10. In a fiber cleaning apparatus, in combination, relatively movable members provided with coacting means for pulling apart and combing fiber, means for scraping and cleaning the same, means for deflecting the fiber against said scraping and cleaning

means, a plate for confining the air current in direction through the apparatus, and means for regulating the draft throughout said apparatus.

5 In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses at Los Angeles,

county of Los Angeles, State of California, this 22nd day of August, A. D. 1907.

JUSTIN KAY TOLES.

Witnesses:

MARIE H. HUEHNER,

MARGARET WALSH.