

J. K. TOLES.
 APPARATUS FOR CLEANING AND PREPARING FIBER.
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911,529.

Patented Feb. 2, 1909.

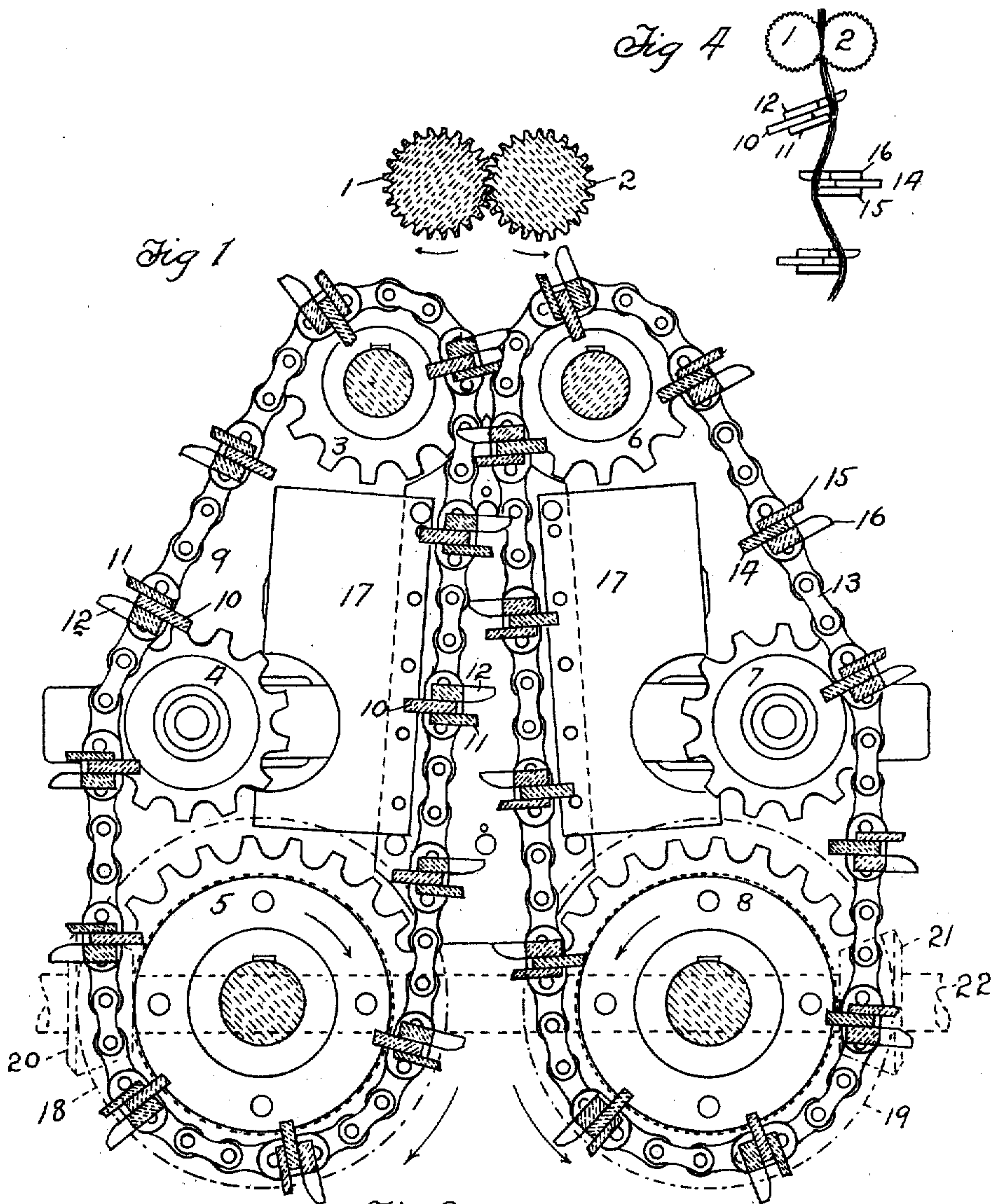


Fig 2

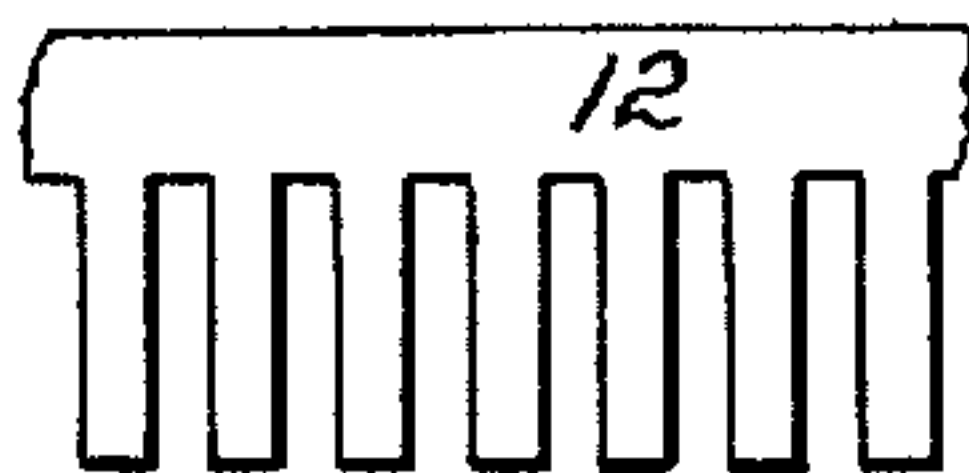
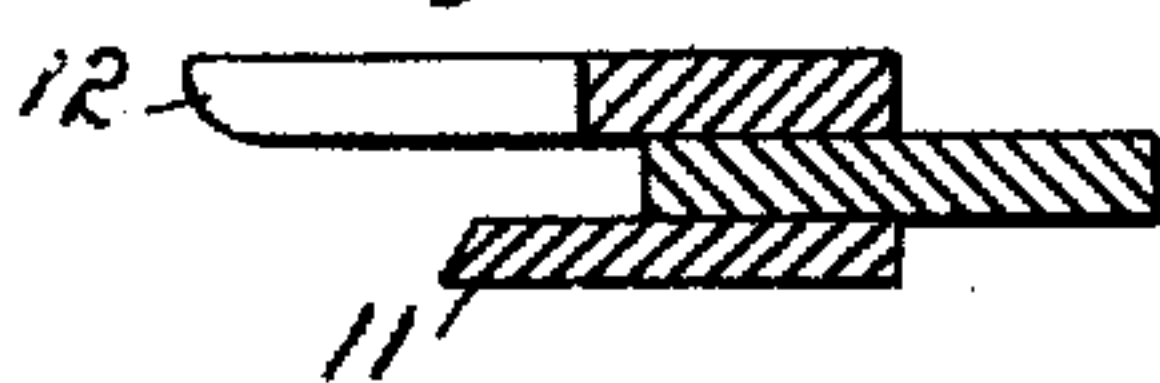


Fig 3



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR CLEANING AND PREPARING FIBER.

No. 911,529.

Specification of Letters Patent.

Patented Feb. 2, 1909.

Application filed September 17, 1907. Serial No. 393,407.

To all whom it may concern:

Be it known that I, JUSTIN KAY 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 Apparatus for Cleaning and Preparing Fiber; 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 and preparing fiber, and has among other objects to provide in a device of this class, means whereby the strain on the fibers will be distributed among the mass of fibers being treated, avoiding breakage and waste of the material.

The invention consists substantially of a plurality of scutching blades alternating with a plurality of teeth; means to actuate the blades and teeth and devices to feed the fiber to, and to hold it in a position to be acted upon by said blades and teeth.

One form of the invention is herein described and is illustrated in the accompanying drawing, in which—

Figure 1 is a sectional view of the apparatus. Fig. 2 is a detail of one of the combs. Fig. 3 is an enlarged section of one of the combined scutching blades and combs. Fig. 4 is a diagram showing the manner in which the fiber is acted on by the apparatus.

Reference numerals 1 and 2 designate combined feed and grip rolls, between which the fiber to be treated is fed. Immediately below the rolls are mounted devices for carrying and operating the scutching blades and combs, which devices in this instance consist of sprocket wheels 3, 4, 5, 6, 7 and 8, carrying chains 9 and 13, chain 9 traveling over sprockets 3, 4 and 5, and chain 13, over sprocket 6, 7 and 8. It is to be understood that these sets of sprockets and chains are in duplicate, there being one at each side of the machine. Chain 9 carries one end of each of a plurality of members which consist of spacing and stiffening bars 10, to one side of each of which is secured a scutching blade 11, and to the other side a comb 12, said comb preferably consisting of a bar carrying a plurality of rectangular teeth which are slightly rounded on the lower front face. The other ends of bars 10

are supported by the chain at the opposite side of the machine. Chain 13 carries members consisting of the spacing and stiffening bars 14, to which are attached scutching blades 15 and combs 16, similar in construction to those previously mentioned. The members on chain 9 are arranged to occupy a position intermediate of those on chain 13, at the point where they act on the fiber. The working ends of teeth 12 and 16 extend beyond the ends of scutching blades 11 and 15 with which they are respectively associated, and the spaces between the teeth extend inwardly of the face of the blades. Again, it should be noted that the series of teeth on successive members are not on alinement. By the construction of the blades and teeth, as described, and the arrangement, as above pointed out, of the members of which the blade and teeth form a part, is secured effective action on the fiber by the members to clean it of the woody substances or shive and to parallel the individual fibers.

Oil shields 17, are provided to prevent the oil, from the bearings of the machine, coming in contact with the fiber being treated.

The shaft upon which sprocket wheel 5 is mounted has keyed to it bevel gear 18 driven by pinion 20, on shaft 22, and sprocket wheel 8 is driven by gear 19, meshing with pinion 21, on shaft 22. These gears and pinions are arranged so that sprocket wheels 5 and 8 turn in different directions. Shaft 22 may be driven by any preferred source of power (not shown).

The mode of operation is as follows: Motion being imparted to sprockets 5 and 8, and to rolls 1 and 2 in the direction indicated by the arrows, fiber is fed between rolls 1 and 2. Passing down between said rolls it is acted on by the scutching blades 11 and 15, and by combs 12 and 16, whereupon the motion of the rolls 1 and 2 is stopped. The position of the scutching blades in relation to the combs is such that the fiber can not come in contact with the bottoms of the spaces between the teeth of the comb. At the point where the work on the fiber is accomplished the blades of each chain project beyond the median line so that they act to hold the fiber to limit the penetration of the teeth and hold it with sufficient tension to permit effective action of the teeth thereon. The bundle of fiber is pressed together, causing friction between

the individual fibers, thus relieving them of undue strain and preventing breakage. The teeth of combs 12 and 16 pass through the mass of fibers and their edges act in a similar manner but at right angles to blades 11 and 15, separating the broken straw or shive from that portion of the fiber which can not be reached by the straight blades; also assisting the large blades in paralleling the fibers. The form given the points of the teeth prevents them from cutting or tearing the fibers.

I claim:

1. In a fiber cleaning apparatus, a scutching blade, a comb spaced therefrom and attached thereto, means for holding fiber and means for progressing said blade and comb.
2. In a fiber cleaning apparatus, a scutching blade, a comb supported adjacent thereto, said comb having rectangular teeth with rounded working ends, means to hold fiber and means to progress said blade and comb.
3. In a fiber cleaning apparatus, members comprising scutching blades, and combs supported adjacent to said blades and associated therewith to scutch at an angle thereto, said blades and combs constructed and arranged to hold fiber away from the bottoms of the spaces between the teeth of said combs, means to hold fiber, and means to progress said blades and combs.
4. In a fiber cleaning apparatus, a plurality of scutching blades arranged to operate on opposite sides of a bundle of fibers, scutching means associated with said blades and acting on the bundle of fibers at right angles to the action thereon by said blades, means to hold said fibers, and means to progress said blades.
5. In a fiber cleaning apparatus, a plurality of scutching blades arranged alternately to operate on opposite sides of a bundle of fibers, a plurality of teeth associated with said blades and acting at right angles thereto, means to hold said fibers, and means to progress said blades.
6. In a fiber cleaning apparatus, a plurality of scutching blades arranged alternately to operate on opposite sides of a bundle of fibers, the edges of said blades projecting beyond a median line at the working point, a plurality of teeth associated with said blades and acting at right angles thereto,

means to hold said fiber, and means to progress said blades.

7. In a fiber cleaning apparatus, a plurality of wheels, chains passing over said wheels, members carried by said chain and comprising scutching blades with combs attached thereto and spaced therefrom, means to hold fiber, and means to rotate said wheels.

8. In a fiber cleaning apparatus, a plurality of wheels, chains passing over said wheels, alternate scutching blades and teeth provided with edges at right angles to the working face of said blades carried by said chains; means to hold fiber, and means to rotate said wheels.

9. In a fiber cleaning apparatus, a member comprising a scutching blade, and straight edged teeth associated with but spaced from said blade, the working ends of said teeth extending beyond the working face of said blade.

10. In a fiber cleaning apparatus, a member comprising a scutching blade, straight edged teeth associated with but spaced from said blade, the working ends of said teeth being rounded and extending beyond the working face of said blade.

11. In a fiber cleaning apparatus, a member comprising a scutching blade, and straight edged teeth associated with but spaced from said blade, the working ends of said teeth extending beyond the working face of said blade and the bottom of the spaces between said teeth extending inwardly beyond said face.

12. In a fiber cleaning apparatus, a plurality of co-acting members each comprising a scutching blade associated with a plurality of teeth but spaced therefrom, said members arranged to operate oppositely at the working point, the working ends of successive members extending on opposite sides of a median line at such point.

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 6 day of September, A. D. 1907.

JUSTIN KAY TOLES.

Witnesses:

MARGARET WALSH,
LUCY E. WHEELER.