No. 821,448. PATENTED MAY 22, 1906.

H. S. ALBRECHT.

FIBER REDUCING MACHINE.

APPLICATION FILED OCT. 21, 1904.

3 SHEETS—SHEET 1.

Fig. II.

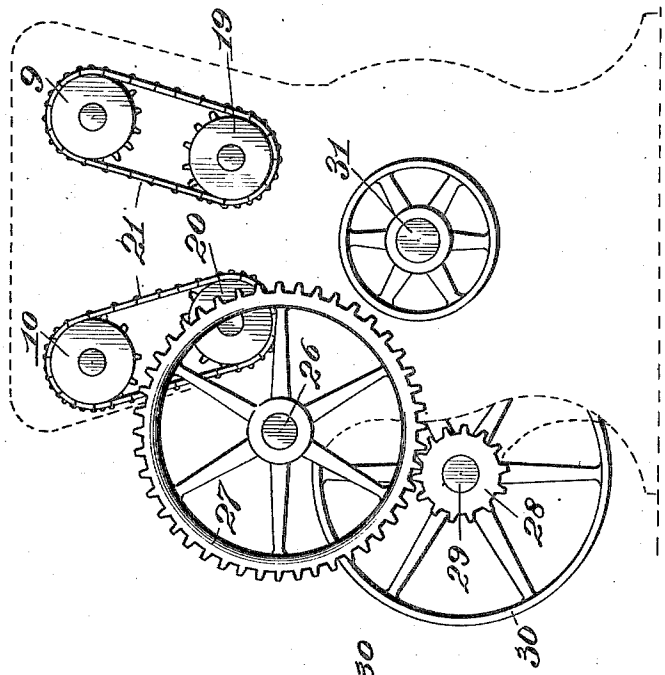
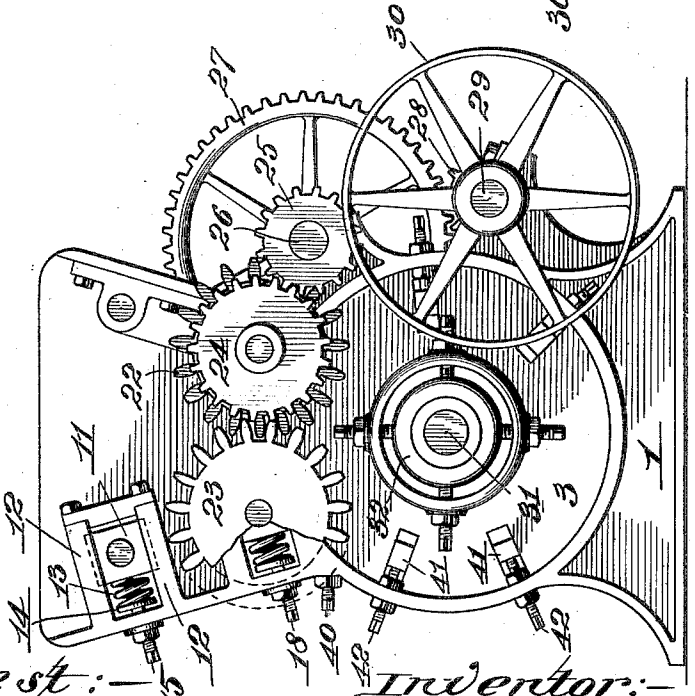


Fig. I.



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3 SHEETS—SHEET 2.

Fig. IV.

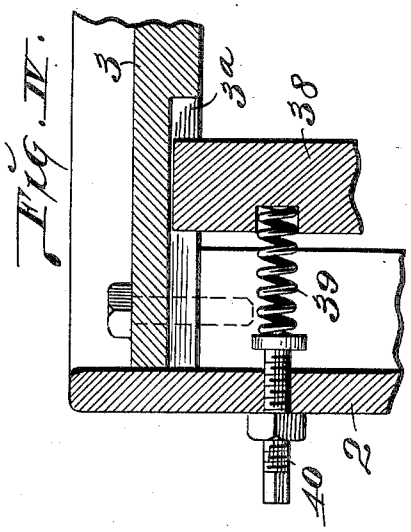


Fig. III.

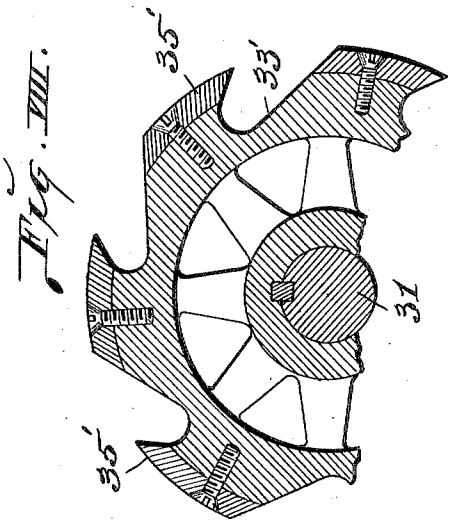
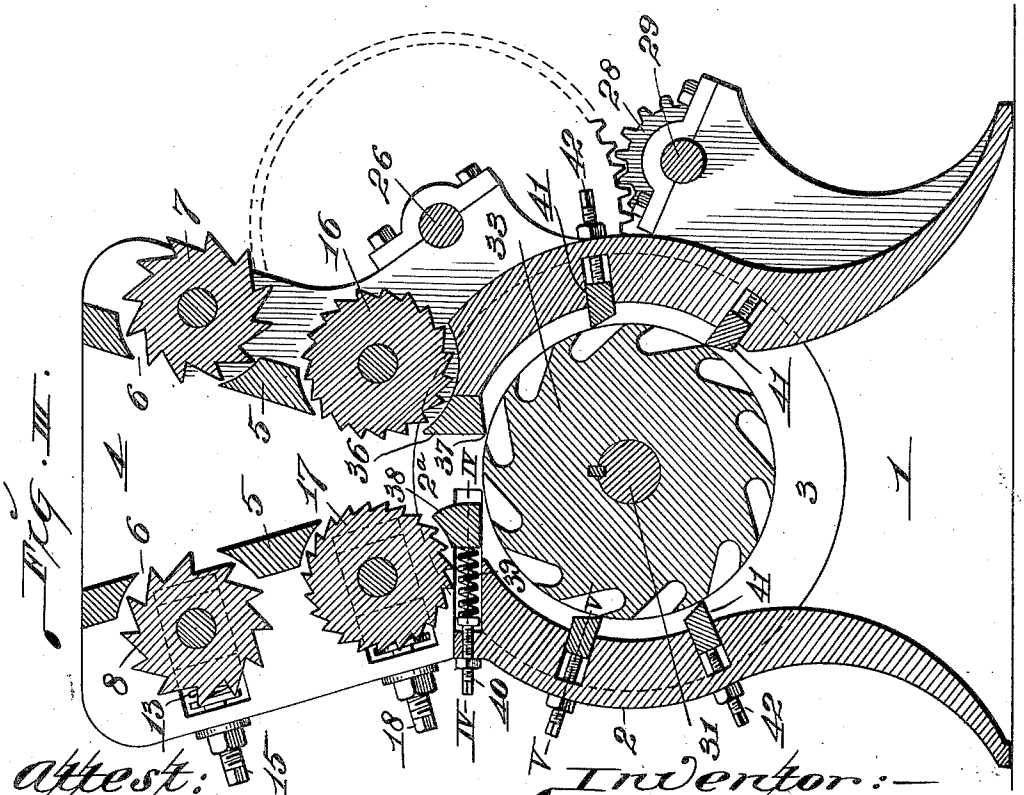


Fig. II.



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3 SHEETS—SHEET 3.

FIG. V.

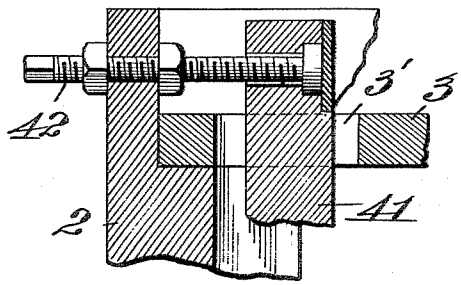


FIG. VI.

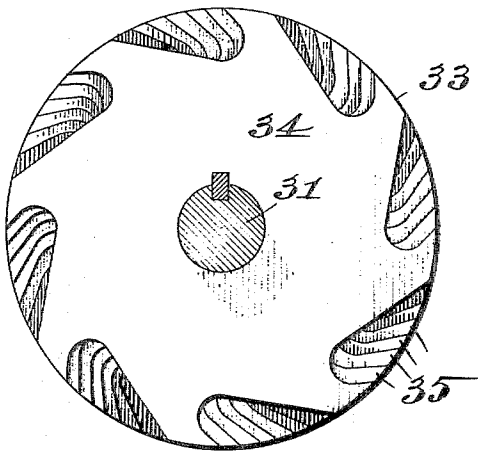
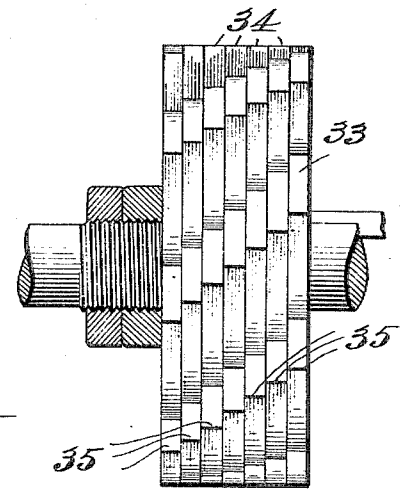


FIG. VII.



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UNITED STATES PATENT OFFICE.

HERMAN S. ALBRECHT, OF ST. LOUIS, MISSOURI.

FIBER-REDUCING MACHINE.

No. 821,448. Specification of Letters Patent. Patented May 22, 1906.

Application filed October 21, 1904. Serial No. 229,494.

To all whom it may concern:

Be it known that I, HERMAN S. ALBRECHT, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Fiber-Reducing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a machine for reducing to a finely-divided or comminuted condition various fibers, such as wood, bark, and straw.

Figure I is an end elevation of my machine. Fig. II is an end view of the gearing at the opposite side of the machine from that seen in Fig. I. Fig. III is an enlarged vertical cross-section of the machine. Fig. IV is an enlarged horizontal section taken on line IV IV, Fig. III. Fig. V is an enlarged section taken on line V V, Fig. III. Fig. VI is a side view of the cutters used in the machine. Fig. VII is a face view of the cutter. Fig. VIII is a cross-section of a modification of the cutter.

1 designates the frame-legs of my machine, and 2 is the cylinder-cutter casing having end walls 3.

4 designates the hopper of the machine, that surmounts the casing 2 and the side walls 5 of which are provided with slots 6, extending longitudinally thereof.

7 and 8 are upper toothed feed-wheels journaled in the end walls of the hopper and having their shafts at one end of the machine protruding through the hopper and bearing toothed driving-wheels 9 and 10. These feed-wheels protrude through the slots in the hopper sides 5 into the space within said hopper. The shaft of the wheel 7 is journaled in a fixed position in the hopper end walls. The shaft of the feed-wheel 8 is mounted in journal-boxes 11, slidably positioned in guides 12, extending transversely of the hopper 4. (See Fig. I.) The boxes 11 are backed by springs 13, that serve to hold the boxes projected forwardly and hold the feed-wheel 8, journaled therein, yieldingly with respect to the opposing feed-wheel 7. The springs 13 rest at their outer ends against heads 14 at the inner ends of set-screws 15, adjustably mounted in the adjacent hopper side wall.

16 and 17 designate lower feed-wheels located, respectively, beneath the upper feed-wheels 7 and 8. The shaft of the feed-wheel 16 is journaled in a fixed position similar to the shaft of the feed-wheel 7, and the shaft of the opposing feed-wheel 17 is adjustably supported for movement toward the wheel 16 in slidable boxes corresponding to the boxes in which the shaft of the surmounting feed-wheel 8 is journaled, the said boxes being backed by springs that are seated against set-screws 18. Fixed to the shafts of the lower feed-wheels are toothed driving-wheels 19 and 20, located exterior of the hopper 4 and geared to the driving-wheels 9 and 10 of the upper feed-wheels by drive-chains 21.

Power is transmitted to the shafts of the lower feed-wheels by the following mechanism: 22 and 23 are spur-wheels fixed, respectively, to the shafts of the lower feed-wheels 16 and 17 and intermeshing with each other. 24 is a pinion mounted upon the shaft of the feed-wheel 16 alongside of the spur-wheel 22 and having arranged in mesh therewith a pinion 25 on a shaft 26, journaled in suitable bearings projecting from the cutter-casing 2 of the machine. Fixed to the shaft 26 is a spur-wheel 27, that meshes with a pinion 28, carried by a shaft 29, equipped with a belt-pulley 30, to which power may be communicated to drive the described mechanism and impart rotation to the lower feed-wheels, from which power is in turn transmitted to the upper feed-wheels through the medium of the drive-chains 21 and the drive-wheels mounted upon the shafts of the feed-wheels.

2^a designates the throat of the cutter-casing 2, located at the bottom of the hopper 4.

31 is a shaft extending longitudinally through the cutter-casing and rotatably supported in journal-boxes 32, located in the end walls of the casing. On the shaft 31 within the casing is a cutter 33 of cylindrical form. This cutter, as seen in Figs. VI and VII, consists of a plurality of blades 34, having peripheral teeth 35. These blades are laid side by side and keyed to the shaft 31, with the various teeth thereof slightly offset in stepped relation to each other, so that the teeth will be consecutively advanced from one another throughout the cutter.

36 designates a throat cutter-bar located in the throat of the casing 2 and extending longitudinally of the cylinder-casing and having a knife-edge 37, that opposes the rotatable cutter 33.

38 is a presser-bar that is movably mounted in guideways 3^a in the cutter-casing end walls 3. This presser-bar opposes the throat

cutter-bar 36 and extends parallel therewith. The presser-bar 38 is yieldingly held in a forwardly-projected position by springs 39, located at the rear thereof and resting against set-screws 40, by which the degree of tension in the springs may be increased or diminished. The presser-bar serves to press the material fed into the hopper 4 and carried therethrough by the feed-wheels 7, 8, 16, and 17 toward the throat cutter-bar 36 as it passes through the throat 2^a in order that the teeth of the cutter 33 may act against the material while it is fed to the knife-edge of said throat cutter-bar.

41 designates a plurality of cutter-bars seated in pockets in the cutter-casing 2 and projecting into the chamber of said casing into positions adjacent to the path of rotation of the teeth of the rotatable cutter 33, the said cutter-bars having adjustment-screws 42 fitted thereto and passing through the ends of the cutter-casing, as seen in Figs. III and V, by which they may be shifted to and from the perimeter of the rotatable cutter. As seen in Fig. V, the cutter-bars 41 pass loosely through openings 3′ in the cutter-casing end walls 3, in which their movement to carry them to or away from the rotatable cutter is permitted.

In Fig. VIII, I have shown a modification of my rotatable cutter, which consists of a hub 33′, having removably fitted thereto a plurality of cutter-blades 35′.

I claim as my invention—

The combination of a cutter-casing having guideways on opposite sides thereof, a fixed throat cutter-bar, a presser-bar movable at its ends in said guideways, set-screws mounted in the casing, and springs each seated at one of its ends against the presser-bar and bearing at their other ends against said set-screws, substantially as set forth.

HERMAN S. ALBRECHT.

In presence of—

BLANCHE HOGAN,

NELLIE V. ALEXANDER.