

H. M. HORN.
GRINDING ELEMENT FOR WOOD FIBER MAKING MACHINES.
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902,732.

Patented Nov. 3, 1908.

Fig. 1.

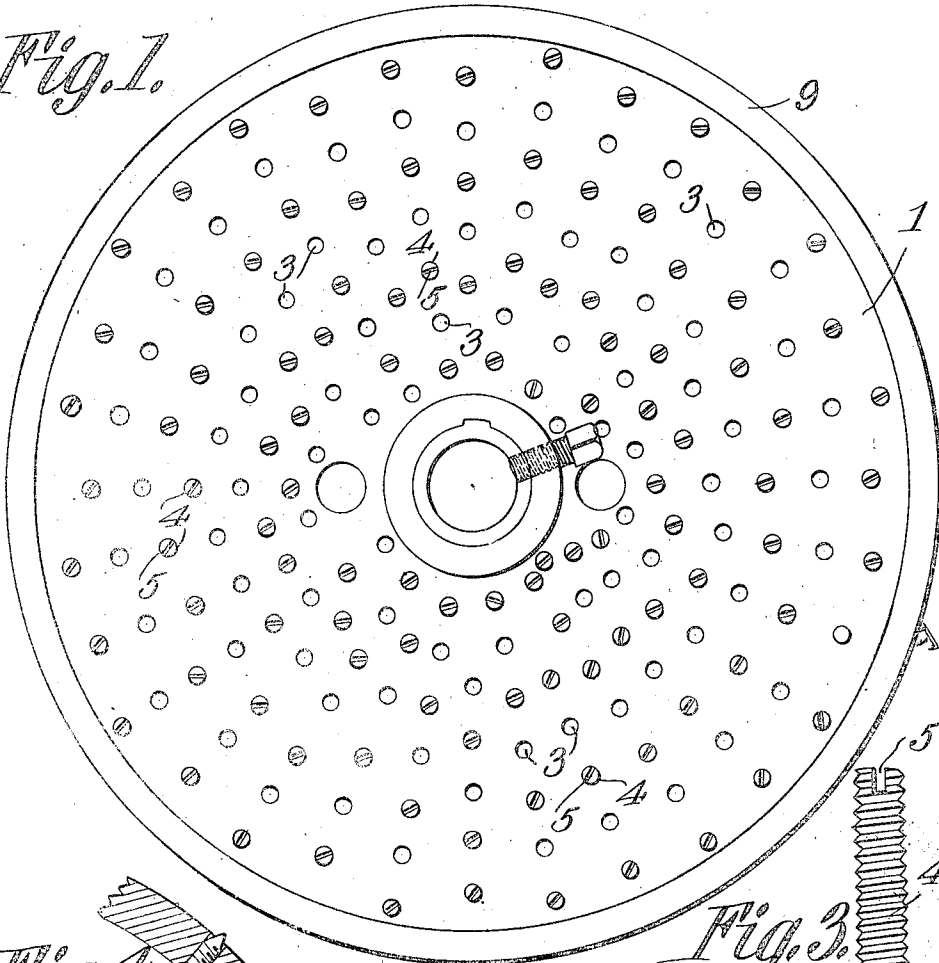


Fig. 4.

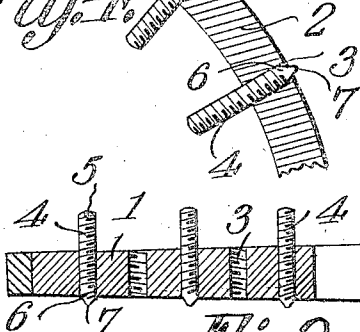
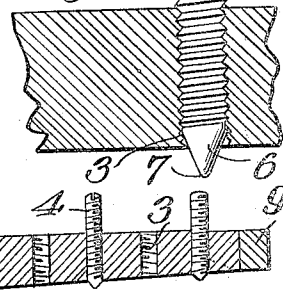


Fig. 3.



WITNESSES: *Fig. 2.* Harry M. Horn, INVENTOR.
E. J. Hamill By *C. Snow & Co.*
W. H. Crichton-Clarke. ATTORNEYS

UNITED STATES PATENT OFFICE.

HARRY M. HORN, OF COSHOCTON, OHIO.

GRINDING ELEMENT FOR WOOD-FIBER-MAKING MACHINES.

No. 902,732.

Specification of Letters Patent.

Patented Nov. 3, 1908.

Application filed November 5, 1907. Serial No. 400,835.

To all whom it may concern:

Be it known that I, HARRY M. HORN, a citizen of the United States, residing at Coshocton, in the county of Coshocton and State of Ohio, have invented a new and useful Grinding Element for Wood-Fiber-Making Machines, of which the following is a specification.

This invention relates generally to machines for making wood fiber, and particularly to the wood grinding elements thereof.

The objects of the invention are to improve and simplify the construction of such grinding elements; furthermore, to increase their efficiency in operation and to decrease the expense attending their manufacture.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of the following claims without departing from the spirit of the invention or sacrificing any of its advantages.

In the accompanying drawings forming part of this specification: Figure 1 is a plan view of a grinding element constructed in accordance with the present invention; Fig. 2 is a vertical section through the grinding element in the form of a disk; Fig. 3 is an enlarged sectional view, showing one of the grinding studs; and Fig. 4 is a sectional view through a portion of a grinding element in the form of a cylinder.

Like reference numerals indicate corresponding parts in the different figures of the drawings.

So far as I am aware, it has been customary heretofore to construct the grinding elements of wood working machines either with saw teeth or with studs having sharp corners or cutting edges. Grinding elements of this character serve to splinter the wood or to grind it into small pieces which are useful principally as wood pulp for making paper. The grinding element of the present invention has in view a purpose which is different from the purpose of the above-mentioned grinding elements, in that my device is intended to produce long silken fibers which are adapted to be used as a binder for rock plaster to take the place of hair. The long silken fiber produced by means of the present

invention is adapted to be packed and shipped in bales, and thus is much more easy and inexpensive to transport than the wood fiber produced by former devices in the form of short splinters which are required to be packed into sacks.

The grinding element of the present invention may be either in the form of a disk 1, as illustrated in Fig. 1, or a cylinder 2, as illustrated in Fig. 4. In both forms of the invention the grinding element is provided with threaded apertures 3 into which are adjustably and removably fitted grinding studs 4 having threads to engage the apertures 3 and slots or grooves 5 in their rear ends to receive a screw-driver or other implement for adjusting or removing the grinding studs. Each of the grinding studs 4 is formed with an approximately conical portion 6, the end 7 of which is rounded and blunt and preferably polished so as to be devoid of surface projections, as shown. The peculiar advantages of the present invention reside in the shape of the conical portion 6 and rounded end 7, as described. It is found in practice that by using grinding studs of this shape, and by rotating the grinding element rapidly in contact with a piece of wood, such, for example, as cottonwood, held so that the studs move in a direction transverse to the fiber of the wood, a very high grade of wood fiber is produced consisting of long silken pieces or fibers. In the event that any of the studs become worn at their outer ends so as to lose their shape, or in the event that it be desired to use the grinding element with a lesser number of studs, said studs can be readily removed by unscrewing them from the threaded apertures. Furthermore, they can be easily adjusted to cause them to project to the desired extent from the surface of the grinding element.

The lower or active face of the disk or grinding element shown in Figs. 1 and 2 is preferably inclined or beveled from the center of the disk towards the peripheral edge thereof, as indicated at 8, so as to permit the work after clearing the inner set of grinding studs to be discharged at the periphery of the disk without coming in contact with the outer set or sets of studs.

If desired, however, the active face of the grinding disk may be flat and in some cases the peripheral edges thereof are reinforced by a strengthening band or annulus 9.

It will be understood that the grinding ele-

ment is secured to any suitable form of shaft which is rotated with the desired degree of rapidity to grind a block of wood into wood fiber.

5 The improved grinding element of the present invention is strong, simple, durable and inexpensive in construction as well as thoroughly efficient in operation.

What is claimed is:

10 1. A wood fiber grinding element comprising a disk having its active face inclined from the center thereof to the peripheral edge of the disk, there being threaded openings formed in the body of the disk, and
15 grinding studs engaging the threads of said openings and having their active ends projected below the inclined face of the disk and provided with conical terminals the ends of which are rounded and blunt, the ends of the

conical terminals being free from surface projections. 20

2. A wood fiber grinding element including a body portion having a threaded aperture formed therein, and a grinding stud having exterior threads for engagement with the 25 threaded walls of the aperture, one end of the stud being devoid of threads and tapered to produce an approximately conical portion, the terminal of which is rounded and blunt. 30

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HARRY M. HORN.

Witnesses:

A. M. LEFFLER,
S. C. DIVAN.