

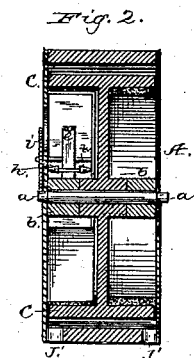
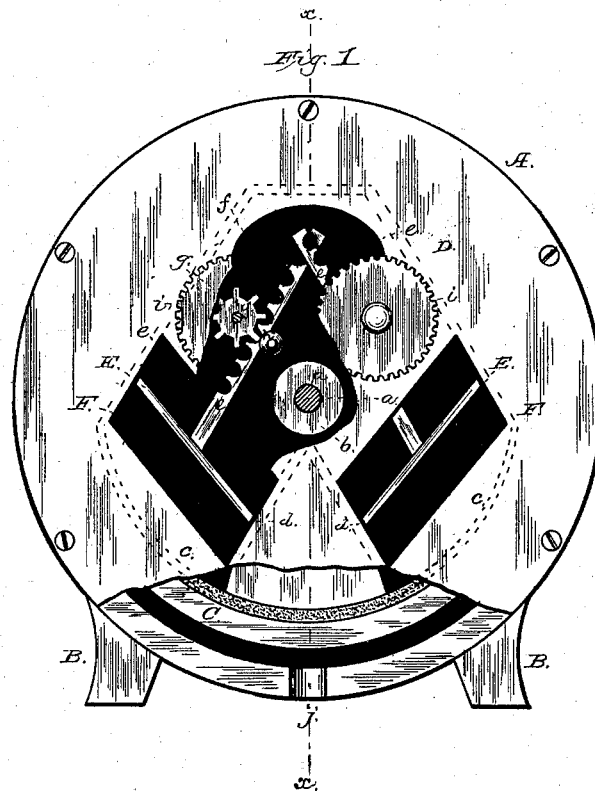
(No Model.)

H. P. TITUS.

MACHINE FOR REDUCING WOOD TO PAPER PULP.

No. 263,250.

Patented Aug. 22, 1882.



WITNESSES;

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# UNITED STATES PATENT OFFICE.

HERMAN P. TITUS, OF LISBON, NEW HAMPSHIRE.

## MACHINE FOR REDUCING WOOD TO PAPER-PULP.

SPECIFICATION forming part of Letters Patent No. 263,250, dated August 22, 1882.

Application filed June 10, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN P. TITUS, of Lisbon, in the county of Grafton and State of New Hampshire, have invented a new and useful Improvement in Machines for Reducing Wood to Paper-Pulp; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The invention which is to be hereinafter described and illustrated has reference to that class of machines known as "machines for reducing wood to paper-pulp."

The object it has in view is to so construct such a machine that the water and partially-ground pulp will not be thrown from the grinding-wheel by centrifugal force, and will not fall therefrom by its own weight until said pulp is thoroughly ground.

The advantages of a grinder so constructed are, first, a more perfect distribution of the water on the grinding-surface is obtained; second, a finer and more even quality of pulp is secured; and, third, less power is required for its operation.

To the accomplishment of the above the invention consists of a pulley-shaped grinding-wheel mounted on a suitable horizontal shaft, and having the inner face of its rim covered with emery or other suitable grinding material. This wheel is inclosed in a stationary cylindrical covering the ends of which are covered with specially-constructed heads. Each of these heads is provided with a suitable bearing-box for the horizontal shaft on which the grinding-wheel is mounted. In addition to these bearing-boxes, the heads which cover the ends of the cylindrical casing have secured to their inner faces peculiarly-shaped feed-boxes, in which are situated and operated suitable followers for holding the wood to be reduced against the grinding-surface of the wheel. These followers are manipulated by means of a series of ratchets, cogs, and racks, all as more fully hereinafter described and illustrated.

For the better understanding of my invention, and to enable those skilled in the art to make and use the same, reference will be hereinafter made to the accompanying drawings, in which—

Figure 1 is an elevation of an apparatus em-

bodifying all the features of my invention, and Fig. 2 a sectional view taken on line *xx*, Fig. 1.

In the drawings, A represents a stationary cylindrical casing or shell, which is mounted on suitable feet or supports, B B. This shell is made of any suitable material, and its size determined by the size of the grinding-wheel employed, it being sufficiently large to allow of an easy revolution of said wheel therein.

The grinding-wheel, which is marked C in the drawings, is made of any suitable material, and is preferably pulley-shaped, having the inner face of its rim, or that portion which forms the grinding-surface, divided into two equal parts by its spokes or supports. The portion of the wheel above referred to—viz., the inner face of its rim—is covered with emery or any other suitable grinding material, which is held thereon by any of the well-known means. This wheel C is mounted on and rigidly secured to a horizontal shaft, *a*, said shaft having its bearings in suitable bearing-boxes, *b b*, which are secured one to each of the heads D D. To the inner faces of these heads D D are rigidly secured the peculiarly-shaped feed-boxes *c c*, the outlines of which are shown in dotted lines.

In each of the boxes *c* is located a follower, E. These followers consist each of a flat piece of metal or heavy wood, *d*, which by its own weight presses down against the wood to be reduced to pulp, thus forcing said wood against the grinding-surface of the wheel C. To the upper face of this piece *d* is rigidly secured a rack, *e*, the teeth of which mesh with the teeth of a cog-wheel, *f*, which is mounted on a rod, *g*, said rod having its bearings in the head D and the rear face of the feed-box *c*. The opposite or smooth face of the rack *e* passes over a rod, *h*, which, as shown, is situated at a suitable point below the rod *g*. This rod *h* is slightly cut away at its center, and together with the rod *g* serves as a guide for the rack *e*.

To the outer end of the rod *g*, as shown, is secured a ratchet-wheel, *i*, by means of which the followers are raised to allow of the insertion into the machine of a new block of wood to be reduced.

In the heads D D suitable openings, F F, are formed, through which the wood to be operated upon is inserted into the machine.

Between the inner faces of the heads D D

and the edge of the wheel C a sufficient space is left to allow of the escape through the openings *j j*, formed in the casing A, of the pulp when sufficiently reduced.

5 The operation of the machine is as follows: Motion is imparted to the grinding-wheel by suitable power being applied to the shaft on which said wheel is mounted. The followers E are then raised through the medium of the  
10 racks, cogs, and ratchets described, and the wood to be operated upon is inserted through the openings F F. The followers are then released, and by their own gravity descend and force the wood against the grinding-surface of  
15 the wheel C. The shape of the wheel C, and the fact of its being inclosed in the casing A, prevent the pulp from being thrown therefrom by centrifugal force or by its own weight until it has been sufficiently reduced to pass  
20 off through the openings *j j*, formed in the casing A. When the blocks previously inserted into the machine have been consumed the followers are raised sufficiently to allow of the insertion of new ones, and the operation continues as above described.  
25

Having thus fully described my invention, what I claim as new therein, and that for which I desire to secure Letters Patent, is—

1. In a machine for reducing wood to paper-pulp, a pulley-shaped grinding-wheel inclosed 30 in a cylindrical casing, substantially as described.

2. In a machine for reducing wood to paper-pulp, a pulley-shaped grinding-wheel having the inner face of its rim covered with a grind- 35 ing material and inclosed in a cylindrical casing, substantially as described.

3. In a machine for reducing wood to paper-pulp, the wheel C, inclosed in the casing A, and in combination with the followers E, sub- 40 stantially as described and shown.

4. The followers E, consisting of the plate *d* and rack *e*, in combination with cog-wheel *f* and ratchet *i*, the parts arranged and operated 45 as described.

5. The heads D D, provided with feed-boxes *e e*, in combination with followers E and wheel C, substantially as described and shown.

This specification signed and witnessed this 8th day of June, 1882.

HERMAN P. TITUS.

Witnesses:

A. A. WOOLSEN,  
H. E. PALMER.