J. H. BURGHARDT.

Grinding Wood for Paper-Pulp.

No. 198,236. Patented Dec. 18, 1877.

Fig. 1.

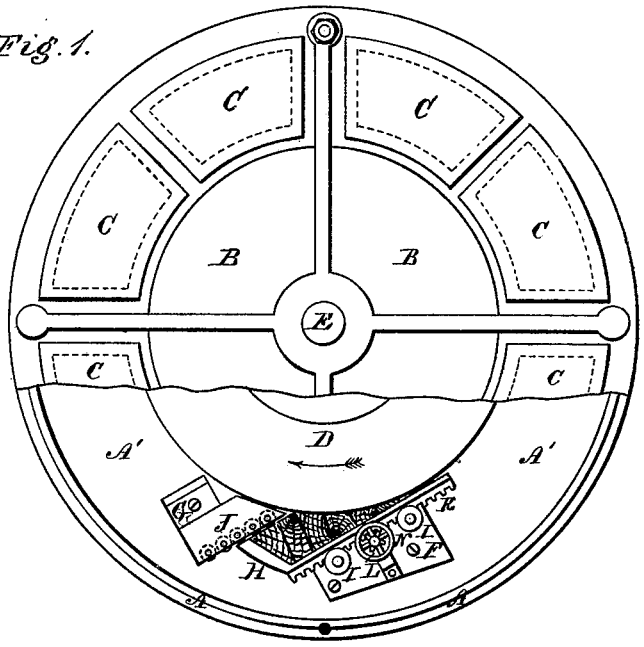
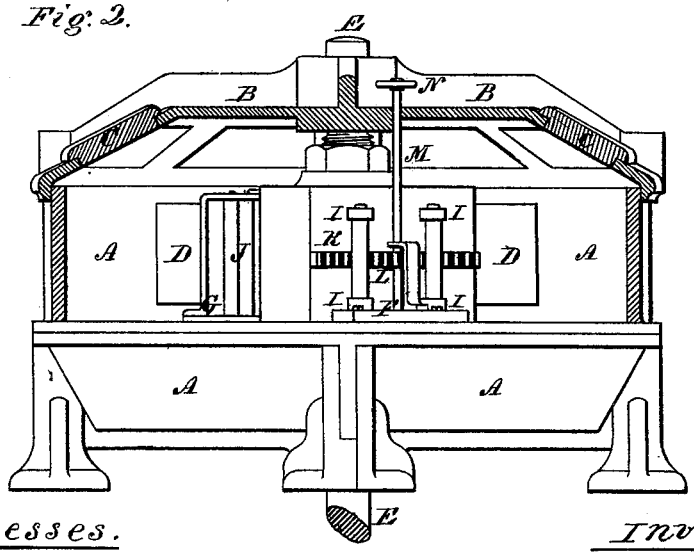


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN HENRY BURGHARDT, OF STOCKBRIDGE, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS OF HIS RIGHT TO CHARLES H. LONGLEY, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN GRINDING WOOD FOR PAPER-PULP.

Specification forming part of Letters Patent No. **198,236,** dated December 18, 1877; application filed November 21, 1877.

To all whom it may concern:

Be it known that I, JOHN HENRY BURGHARDT, of Stockbridge, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Grinding Wood for Paper-Pulp; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My invention relates to such machinery as is used for grinding and disintegrating the fibers of wood to convert it into a suitable form for use in the manufacture of paper.

The object of my invention is to provide a better method of presenting the wood to the stone by which it is ground, so that less power is required to drive the stone, and more uniformity of pressure of the wood upon the stone is obtained than is practicable with the machinery now commonly used. It also has for its object the holding of the blocks from which the pulp is ground firmly in the most desirable position or angle to the stone, so that they cannot be displaced by the force of the grinding or by the action of moving forward against the stone.

My invention consists in the mechanism and arrangement of devices that will be hereinafter described.

In the accompanying drawing, Figure 1 is a top view of my improved grinding apparatus, with a portion of the cover of the grinding-chamber removed, so as to show the grinding mechanism; and Fig. 2 is a side view of the same, having the front portion of the tub and cover removed, so as to show the interior parts.

A is a tub for containing the grinding mechanism. B is the cover. This cover is furnished with openings around its circumference, which are closed by the removable lids C C, &c. These are for the purpose of ready access to the interior when desired, and can be closed while the machine is in operation. D is a grindstone, turning in the direction of the arrow, and fixed upon the shaft E, from which it receives its motion. The shaft E passes through a stuffing-box in the bottom of the tub A, to prevent the escape of the ground pulp.

The tub A is furnished with an annular shelf or rim, A′, upon the interior, for supporting the grinding mechanism. To this the parts F and G, forming guides for the carriage H, are firmly attached.

H is a sliding carriage for holding the blocks of wood to be ground, and pressing them up against the circumference of the stone D. This carriage runs between the rollers I I upon the frame F and the rollers J upon the frame G. It is moved back and forth by means of the rack and pinion K L, the pinion being fixed upon a shaft, M, which is turned by means of a hand-wheel, N, or by any ordinary means of giving a proper force upon the pinion to press the wood against the stone.

The blocks of wood to be ground are packed into the carriage H in the proper position, and at the proper angle to give the best effect in the operation of grinding. To receive them the carriage is drawn back as far as practicable from the stone, and in this position the blocks rest against the end and front side of the carriage, and at the back bear against the rollers J, upon which they roll as the carriage advances toward the stone. The stone, turning in the direction of the arrow, as shown in Fig. 1, grinds off the wood without disturbing the position of the blocks, the friction pressing them more firmly into the carriage. It will be also observed that as the carriage is pressed up against the direction in which the surface of the stone moves, the amount of pressure can be regulated at will.

Heretofore wood has been pressed up against a revolving stone for the purpose of grinding; but it has been pushed through stationary channels or sockets, through which the blocks advanced as they were ground off, and always in the direction of the revolution of the stone, the friction of grinding in this case assisting in drawing the wood into the narrower part of the socket, which has been made tapering,

to conform to the diminished size of the blocks as they are ground off. In this arrangement the blocks are drawn away from each other, and displaced, so that the position in which the grain is presented to the surface of the stone is very irregular, and too great an amount of friction is caused, so that the pressure upon the stone is irregular, and the grinding uneven and unsatisfactory.

By means of my invention the wood can be presented to the grinding-surface with any amount of friction desired, so that the finest fibers can be obtained from the operation, and at the same time the blocks can be placed in the carriage at the exact angle to the axis of the stone that has been found to produce the best results, without any danger of displacement by the grinding.

In the drawing but one carriage containing the wood blocks for grinding is shown; but there may be as many as can be conveniently placed around the stone.

What I claim as my invention is—

1. The combination of a sliding carriage, H, for containing blocks of wood to be ground, with a grindstone turning against the line of direction in which the carriage advances, substantially as and for the purpose herein described.

2. A movable carriage for containing blocks of wood, set firmly in any desired position, in combination with an advancing mechanism and a revolving grindstone, substantially as herein set forth.

JOHN HENRY BURGHARDT.

Witnesses:

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