F. Burghardt,

Wood Grinder.

No. 87,139. Patented Feb. 23. 1869.

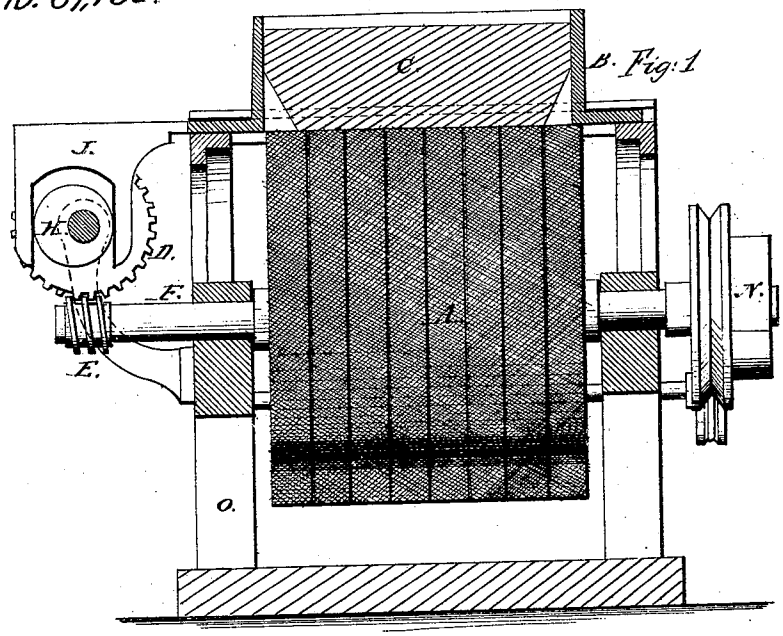


Fig. 1.

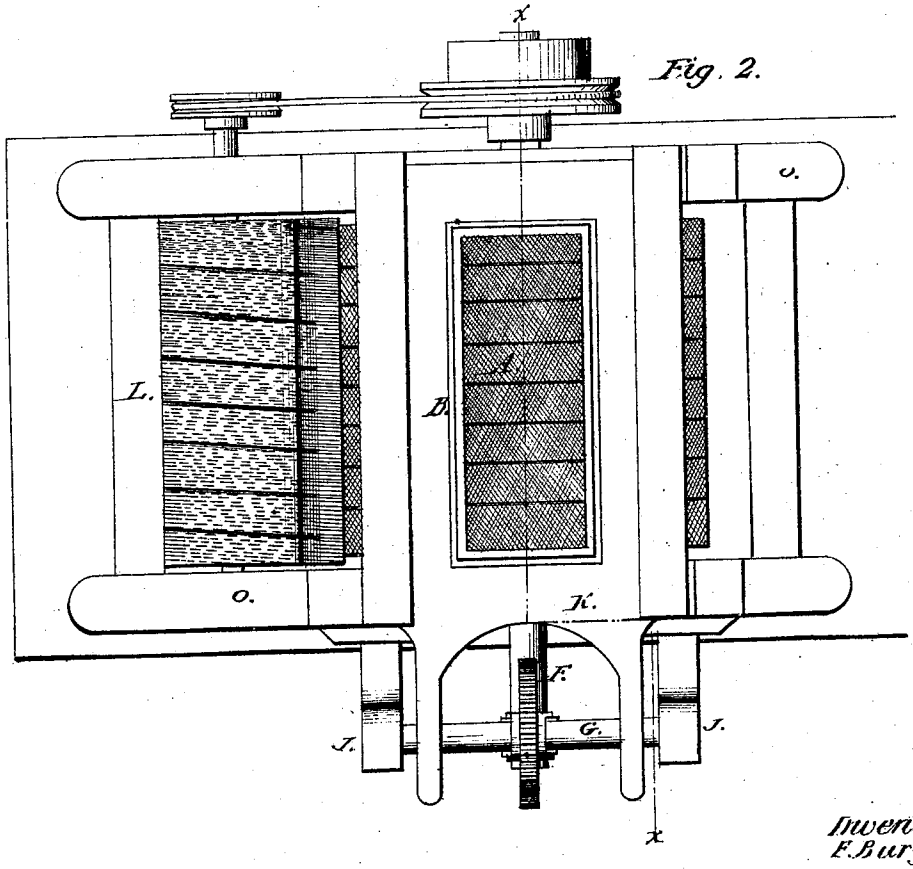


Fig. 2.

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UNITED STATES PATENT OFFICE.

FREDERICK BURGHARDT, OF CURTISVILLE, MASSACHUSETTS.

IMPROVED MACHINE FOR PREPARING WOOD FOR THE MANUFACTURE OF PAPER-PULP.

Specification forming part of Letters Patent No. **87,139**, dated February 23, 1869.

To all whom it may concern:

Be it known that I, FREDERICK BURGHARDT, of Curtisville, in the county of Berkshire and State of Massachusetts, have invented a new and useful Improvement in Machines for Making Paper-Pulp; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and important improvement in producing paper-pulp from wood; and consists in pulverizing the wood by bringing it in contact with a revolving cylinder provided with a grating, filing, or rasping surface, and in vibrating the hopper longitudinally, for changing the cutting or rasping surface of the cylinder on the wood, and also in a revolving cleaning-cylinder, the whole constructed and arranged substantially as hereinafter described.

In the accompanying plate of drawings, Figure 1 represents a side elevation of the machine, showing the cylinder, with the frame and hopper in section, with the manner of vibrating the hopper, the section being through the line *x x* of Fig. 2. Fig. 2 is a top or plan view of the machine, showing the hopper, the cleaning-cylinder, and the arrangement for vibrating the hopper.

Similar letters of reference indicate corresponding parts.

A is the cutting-cylinder, the surface of which is covered with a rasping, filing, or grating medium, put on in sections running round the cylinder, as seen in the drawing, or in any other direction or manner, as may be found most advisable.

B represents the hopper, in which the block of wood to be cut or reduced to pulp is placed.

C represents the block of wood, shown in red color. The block is simply laid in the hopper, and rests on the revolving cylinder, by which it is reduced to a fine pulp and discharged beneath the machine.

Where the rasps, files, or graters are put onto the cylinder, as seen in the drawing, there would necessarily be slight projecting ribs left on the block, in consequence of the slight spaces left between the sections of the rasping or cutting surface, as such spaces or joints would not be cutting-surface. To obviate this difficulty I give the block a slow vibrating motion back and forth on the cylinder. This I accomplish by moving the hopper by means of a worm-wheel, D, and perpetual screw E, the latter being on the cylinder-shaft F and the former on the shaft G, which is placed at right angles with F, as seen in Fig. 2.

H, Fig. 1, represents a cam or eccentric on each end of the shaft G. These cams, as they are revolved by the worm-gear operate on the hopper, and consequently on the wood, which fits, or nearly fits, the inside of the hopper, by means of the yokes J J, which are attached to the bottom plate, K, of the hopper. In this manner the hopper is given a slow reciprocating motion, and the position of the wood is changed on the face of the cylinder.

L is the cleaning-cylinder, which is covered with card-leather and made to run in contact, or nearly in contact, with the cylinder A, for removing the pulverized wood from the face of the cylinder. This cylinder is made to revolve at a greater speed than A, and is revolved by a belt from the main shaft F, as seen in Fig. 2.

The cylinder A may be given any required speed by means of a belt from the motive power on the pulley N.

O represents the frame by which the machine is supported.

The bottom of the hopper slides in grooves above the cylinder, made in raised plates attached to the top of the frame.

By this machine I am enabled to reduce the wood to the proper consistency for mixing with rag or other paper-pulp for manufacturing white and other varieties of paper.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A revolving cylinder provided with a rasping, filing, or grating surface for reducing wood to pulp, substantially as shown and described.

2. Vibrating the wood on the face of a grating, rasping, or filing cylinder, substantially as described, or in any equivalent manner.

3. In combination with the cylinder A, the cleaning-cylinder L, substantially as and for the purposes described.

FREDERICK BURGHARDT.

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