(No Model.)

2 Sheets—Sheet 1.

R. B. LANE.

Machine for Making Paper Pulp from Wood.

No. 233,105. **Patented Oct. 12, 1880.**

Fig. 1.

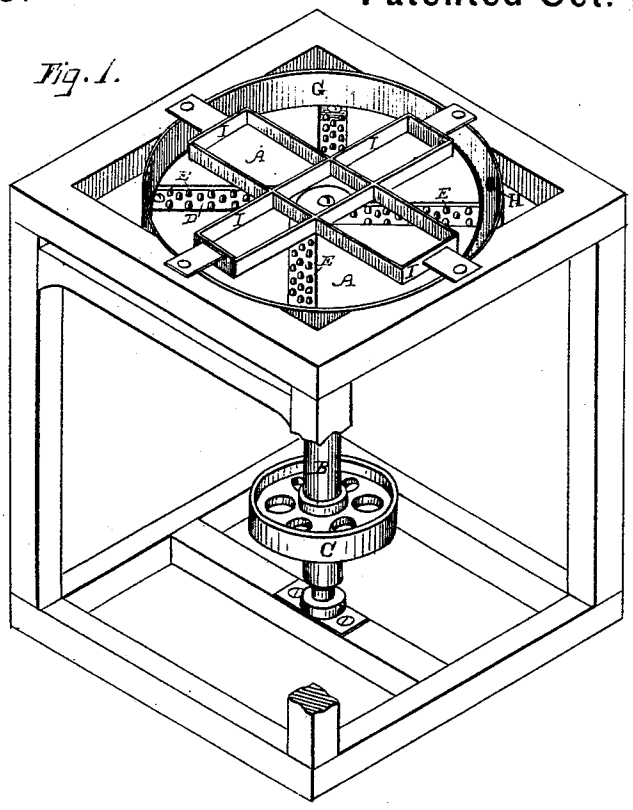
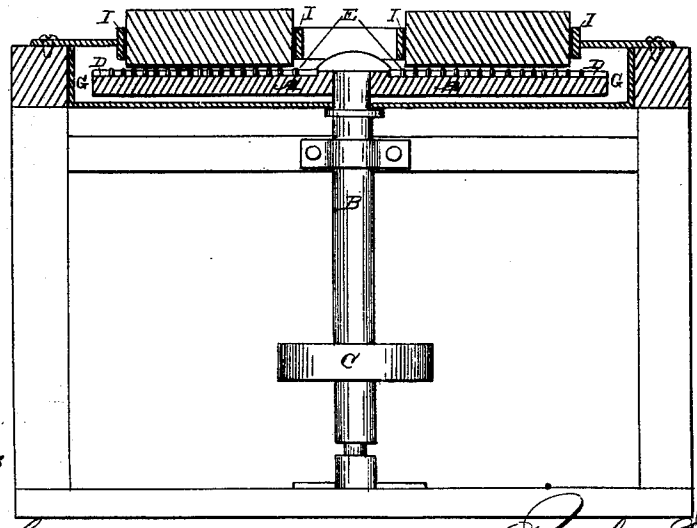


Fig. 2.



Witnesses

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Geo. H. Strong.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3

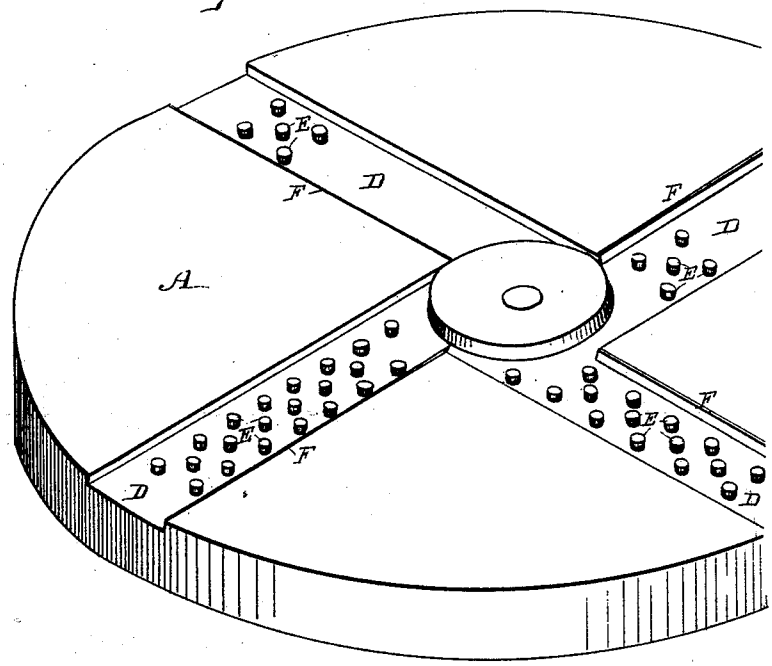
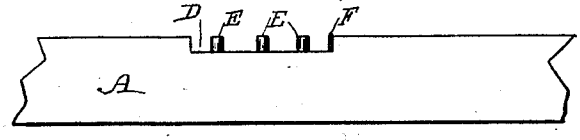


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

RUFUS B. LANE, OF STOCKTON, CALIFORNIA.

MACHINE FOR MAKING PAPER-PULP FROM WOOD.

SPECIFICATION forming part of Letters Patent No. 233,105, dated October 12, 1880.

Application filed May 3, 1880. (No model.)

To all whom it may concern:

Be it known that I, RUFUS B. LANE, of Stockton, county of San Joaquin, and State of California, have invented an Improved Machine for Making Paper-Pulp from Wood; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improved machine for making a pulp from wooden blocks which can be used for paper-making; and it consists in the employment of a series of hard-metal pins, which are placed in rows in such a manner that two or more rows will make a continuous cut. The pins project from a surface or groove which is depressed below the general level of the disk or cylinder which carries them, said pins being adapted to scrape off the fibers of the wood in small particles or pulp, while the depression allows the pulp to be carried away from the cutting-face of the pins as fast as produced. A suitable frame or guides hold the wooden blocks, and a scraper behind each set of pins cleans the blocks of clinging fibers, so that the solid wood will be clear to be operated upon by the next set of pins. The disk or cylinder revolves in a chamber containing water, by which the pulp is carried off, and from this chamber the pulp may be removed through the proper openings.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a view of my machine. Fig. 2 is a vertical sectional elevation, showing the blocks in position. Fig. 3 is an enlarged view of the disk. Fig. 4 is an edge view of a portion of the same.

In the present case I have shown my invention as applied to a disk, A, which is mounted upon the upper end of a vertical shaft, B, driven by the belt-pulley C, so that the disk revolves in a horizontal plane. The upper surface of this disk has channels D cut from near the center to the circumference, the bottom of these channels being below the level of the disk-surface, and pins E are secured in these channels in rows, which so alternate with each other that when the disk is rotated their upper ends will sweep over the whole surface of anything brought into contact with them, thus making a continuous cut. These pins are hardened sufficiently, and their upper ends are flush with or a little above the surface of the disk, according to the texture of the pulp required.

Behind the pins, at the edge of each channel, is a scraper, F, which prevents the clinging fibers from remaining attached to the block, and thus preventing the block from coming in contact with the next set of pins. The channels are of sufficient depth to receive the pulp as it is formed, and it is thus removed from the cutting-faces of the pins. It is then carried out of the depression by water, which may be introduced through a pipe at the center of the disk. The disk revolves within a surrounding chamber, G, of slightly greater depth than that of the disk, and this chamber receives the pulp as it is discharged from the depressions or grooves. From the chamber it is discharged through a suitable opening or openings, H.

The blocks of wood from which the pulp is made are held in guides I, which form a frame supported above the disk, as shown.

Any pressure may be employed to keep the blocks in contact with the disk, which is revolved at a high speed, and the projecting pins will remove the substance of the block in minute fibers and form a pulp.

It will be seen that the channels may also be cut in the face of a cylinder, and provided with pins and scrapers in a similar manner to those in the disk, and the cylinder may be revolved in a water-chamber. The blocks of wood are pressed against the cylinder in the same manner as with the disk and with a similar result.

The groove or channel with independent knives or pins is of the greatest importance, as it prevents the clogging which would otherwise take place. A cylinder with grooves across its face and having one edge which will cut will not do the work, as each groove will become clogged or filled with the wood, and becomes useless.

The channel or groove must be of sufficient width and depth and the pins or scrapers so placed, that the cutting face or edge will be cleared as fast as the pulp is formed.

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

1. In a wood-grinding machine, the revolving disk or surface A, having channels D formed below said surface, and provided with pins E placed in alternate rows, said pins acting to cut away an opposing surface, while the resulting pulp is carried off by the channel, substantially as herein described.

2. The revolving disk or surface A, with its channels D and pins E, in combination with the scrapers F, substantially as and for the purpose herein described.

In witness whereof I have hereunto set my hand.

RUFUS B. LANE.

Witnesses:
S. H. NOURSE,
FRANK A. BROOKS.