2 Sheets—Sheet 1.

J. TAYLOR & J. T. OUTTERSON.

PROCESS FOR MANUFACTURE OF PAPER-PULP FROM WOOD.

No. 191,899. Patented June 12, 1877.

Fig. 1.

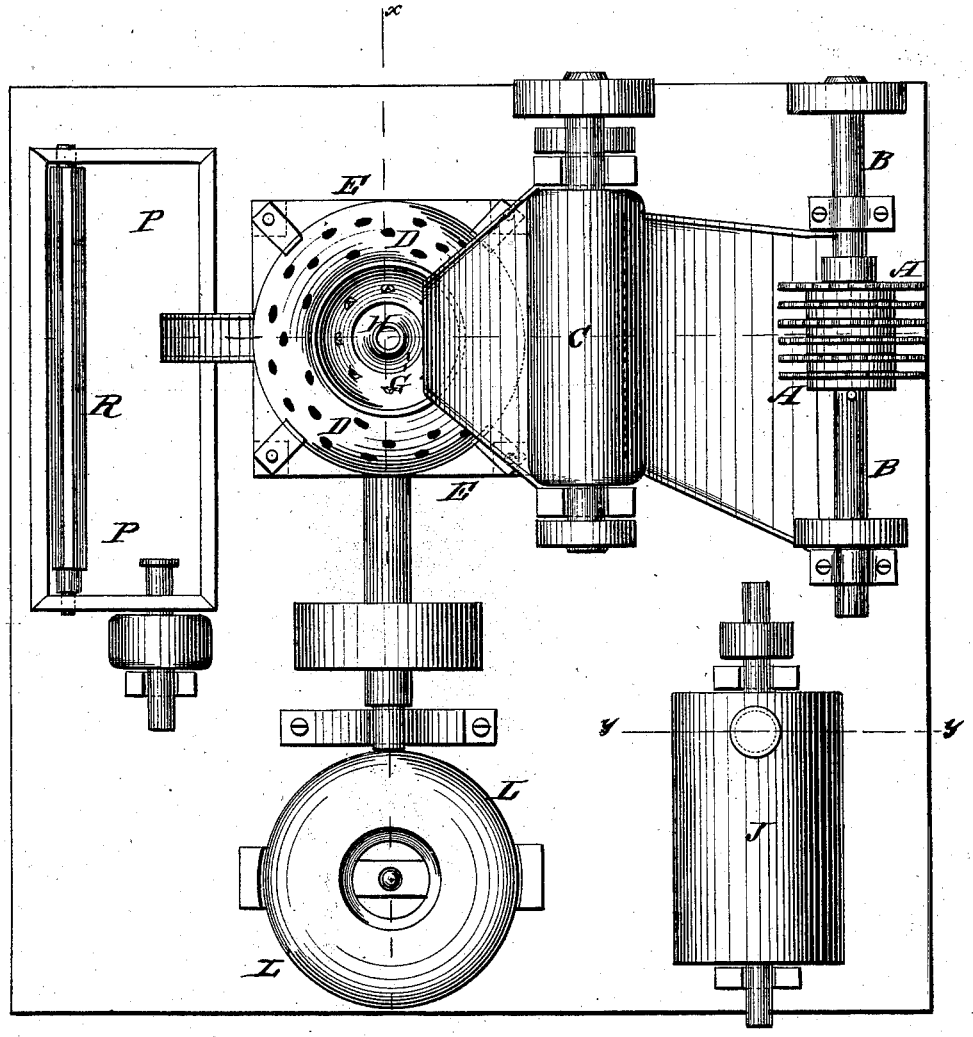

Fig. 3.

Witnesses:

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Frank H. Duffy

Inventors:

James Taylor

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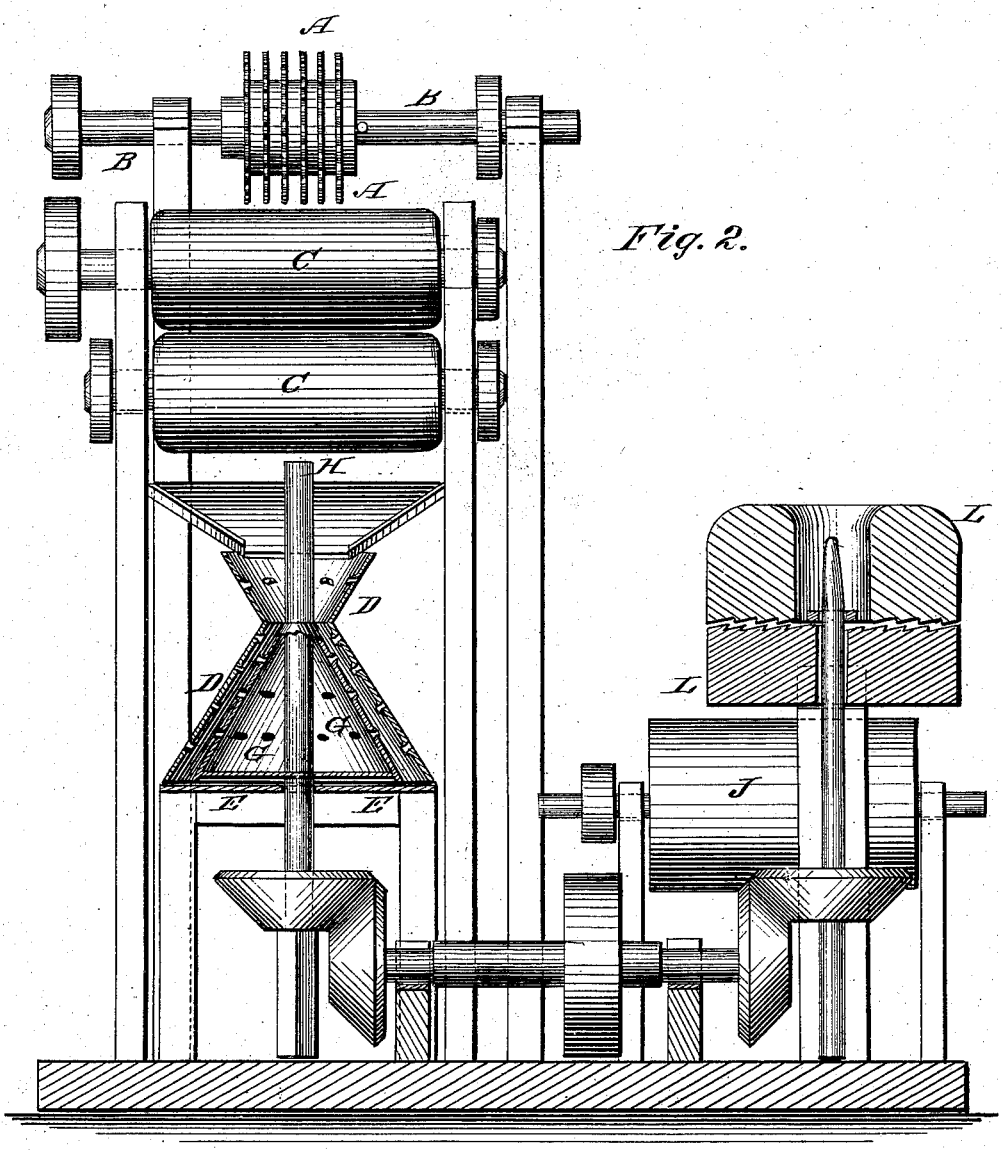

Fig. 2.

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UNITED STATES PATENT OFFICE.

JAMES TAYLOR, OF LUZERNE, AND JAMES T. OUTTERSON, OF PALMER FALLS, NEW YORK.

IMPROVEMENT IN PROCESSES FOR MANUFACTURE OF PAPER-PULP FROM WOOD.

Specification forming part of Letters Patent No. **191,899**, dated June 12, 1877; application filed March 2, 1877.

To all whom it may concern:

Be it known that we, JAMES TAYLOR, of Luzerne, Warren county, New York, and JAMES T. OUTTERSON, of Palmer Falls, in the county of Saratoga and State of New York, have invented certain new and useful Improvements in Crushing Wood; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to processes for making or preparing wood-pulp; and it consists in cutting the wood crosswise of the grain, crushing it endwise of the grain, then picking it, and then subjecting it to the action of steam-pressure, as will be hereinafter more fully set forth.

In the annexed drawings we have represented machinery by which our process may be carried out, and—

Figure 1 represents a plan view of such machinery. Figs. 2 and 3 are sections on the lines *x x* and *y y* of Fig. 1.

A A represent a gang of saws mounted upon a horizontal shaft, B, having its bearings in a suitable frame or standards, as shown. These saws are arranged for cutting off wood crosswise of the grain of the wood.

The pieces of wood thus cut by the saws are fed to one or more sets of rollers, C C, for crushing the wood endwise of the grain of the wood. These rollers should be adjusted to receive wood one-fourth of an inch long, and should be adjustable to any length the fiber may be required for the manufacture of paper for printing, or for bags or belting, or any other fabric where a long fiber is required.

The wood may be pounded endwise of the grain of the wood, or it may be crushed by an eccentric or any other mode of crushing and produce the same result—that is, to crush the wood endwise of the grain to separate the fibers by any mode of crushing, rolling, or breaking the fibers endwise of the grain of the wood.

When thus manipulated the wood is fed into a conical picker for separating the fibers. This picker consists of a stationary conical shell, D, which is roughened on the inside, and fastened on a bottom-plate, E, and an interior cone, G, roughened on the outside, and secured on a vertical shaft, H, which may be adjustable in order to adjust the cone up and down with relation to the surrounding shell D, so as to pick the fibers fine or coarse, as may be required for the manufacture of belting, bagging, or any other fabric.

The wood is now put into a rotating boiler, J, under a pressure of about fifty pounds to the square inch, to facilitate the separation of the fibers. This process also colors the fibers for manila paper. The boiler is provided with interior longitudinal strips *b* beveled on both sides or edges, and formed with roughened projections or teeth *a* to separate the fibers thoroughly.

The wood, after it is sawed off, may be rolled and run into the picker with the sawdust mixed with water, and from the picker run through mill-stones L L for pulp for the manufacture of white paper. At this stage it is run into a vat, P, and taken off from said vat with a belt, and squeezed between two rollers, to relieve it of part of the water for transportation.

The various rotating parts of the machine may be geared together by belts, cog-wheels, friction-wheels, or other devices suitably arranged to accomplish the desired object. Within the vat P is a suitable revolving agitator, R, also run by the gearing that operates the other running parts of the machine.

It will thus be seen that we prepare wood-pulp by one continuous process, by cutting the wood crosswise of the grain, crushing it endwise of the grain, then picking it, and then subjecting it to the action of steam-pressure, whereby we produce a better article in a cheaper and more expeditious manner, and one that is better adapted for the purpose of making paper of any desired quality.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The process for preparing wood-pulp, consisting essentially of cutting the wood crosswise of the grain, crushing it endwise of the grain, then picking it, and then subjecting it to the action of steam-pressure, substantially as herein set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

JAMES TAYLOR.
JAMES T. OUTTERSON.

Witnesses:
EDWARD C. YOUNG,
WALTER P. WILCOX.