I. W. BOWERS & D. A. CURTIS.

DRY WOOD GRINDERS FOR PAPER-PULP.

No. 195,478. Patented Sept. 25, 1877.

Fig: 1.

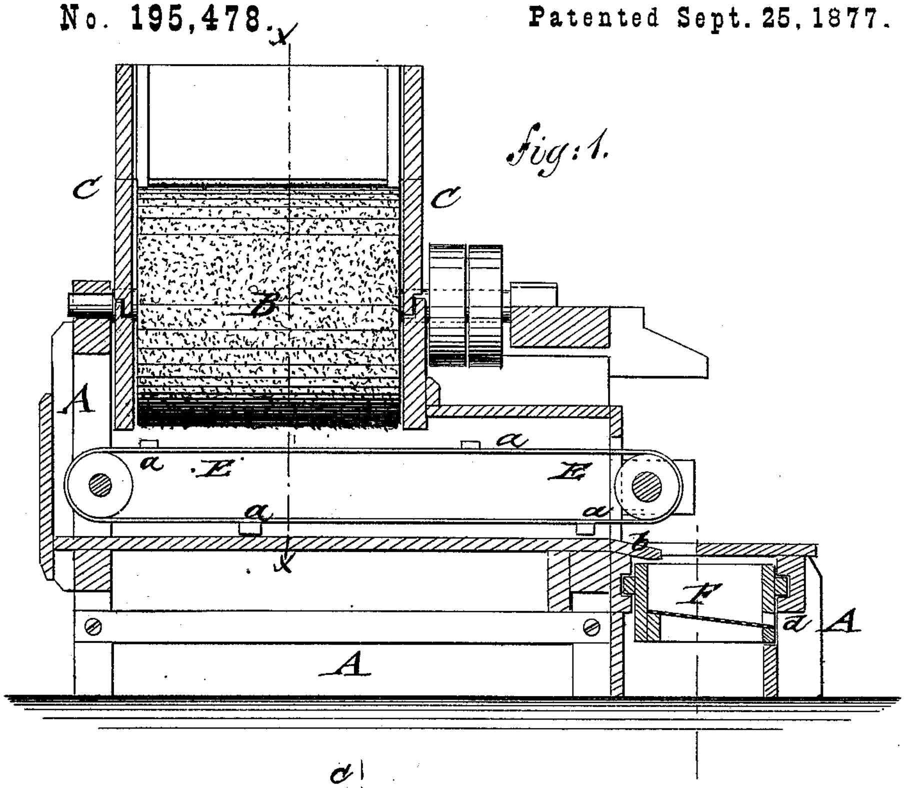
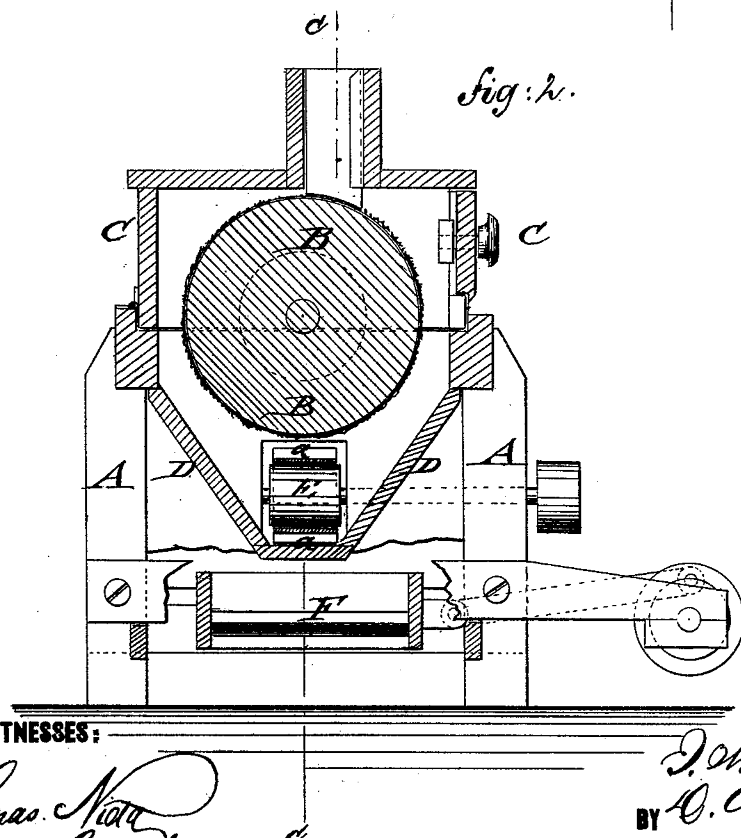


Fig: 2.



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UNITED STATES PATENT OFFICE.

ISAAC W. BOWERS AND DAVID A. CURTIS, OF PETERSBURG, MICHIGAN.

IMPROVEMENT IN DRY-WOOD GRINDERS FOR PAPER-PULP.

Specification forming part of Letters Patent No. **195,478**, dated September 25, 1877; application filed April 25, 1876.

To all whom it may concern:

Be it known that we, ISAAC W. BOWERS and DAVID A. CURTIS, of Petersburg, county of Monroe, and State of Michigan, have invented a new and useful Improvement in Manufacturing Dry-Wood Pulp, of which the following is a specification:

In the accompanying drawing, Figures 1 and 2 represent vertical longitudinal and transverse sections, respectively, on the line *c c*, Fig. 2, and *x x*, Fig. 1, of our improved machine for manufacturing dry-wood pulp.

Similar letters of reference indicate corresponding parts.

Our invention relates to an improved machine for making dry pulp from dry wood in a cheap and simple manner, which pulp has the advantage of being readily shipped, not liable to freeze, and being converted with less labor into paper.

The invention consists of a machine for grinding up the wood by exposing it to the action of a cylinder covered with a grinding-surface of glue, ground flint, quartz, and emery, and conveying the pulp by a hopper and an endless revolving belt to a reciprocating screen.

In the drawing, A represents the supporting-frame of our improved machine for making dry pulp, which is provided with a rapidly-revolving cylinder, B, to which the dry wood to be pulped is fed by a top-casing, C, with a guide and feed-tube for the wood. The wood is exposed to the action of the grinding-surface of the cylinder B, which surface is composed of a mixture of glue, ground flint, ground quartz, and emery. The wood is, by the grinding-cylinder, rapidly converted into pulp, which is conveyed from the cylinder to a hopper, D, below the same, and to an endless rotating belt, E, extending longitudinally along the lower part of the hopper.

The belt E carries the pulp by bucket-strips *a* along the bottom of the hopper to a spout, *b*, outside of the same, to be dropped on a coarse reciprocating screen, F, that is arranged at suitable inclination at the end of the machine, so as to separate the coarser part of the pulp from the finer part, which latter passes through the screen to a suitable receptacle below, while the former passes over the inclined screen through a slot, *d*, in the dividing-partition to an outside receptacle.

The wood pulp produced by a dry process with our machine is, in many respects, superior to that obtained by the wet processes hitherto in use, as it does not mold or freeze, and may be more conveniently shipped.

The machine is cheaper and simpler in construction than those used in wet processes, and may be run without skilled workmen. A number of machines may be arranged side by side, according to the quantities of pulp to be manufactured.

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

An apparatus for making dry-wood pulp, consisting of the revolving cylinder B, coated with glue, ground flint, ground quartz, and emery, the top-casing C provided with guide and feed-tube, the hopper D having outside spout *b*, the carrier belt E *a*, the screen F, and the partition having slot *d*, all constructed, arranged, and combined in a frame, A, as and for the purpose specified.

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Witnesses:
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