A. FICKETT.

WOOD-GRINDERS FOR PAPER-PULP.

No. 194,591. Patented Aug. 28, 1877.

Fig. 1.

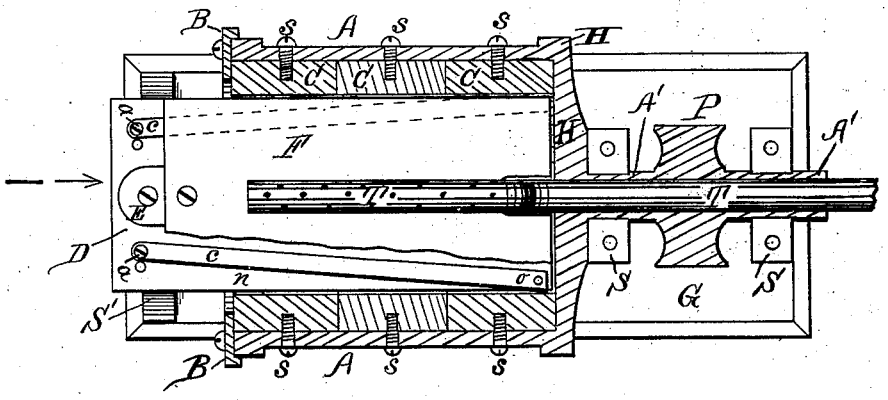
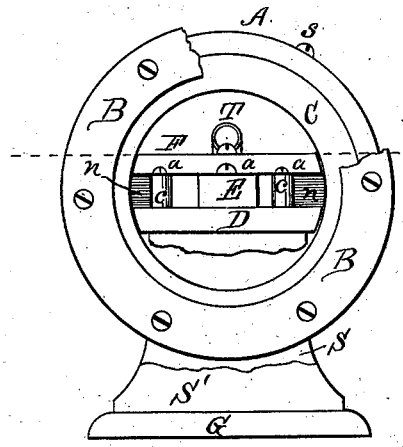


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALBERT FICKETT, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO SENECA DOBBS, OF SAME PLACE.

IMPROVEMENT IN WOOD-GRINDERS FOR PAPER-PULP.

Specification forming part of Letters Patent No. **194,591**, dated August 28, 1877; application filed July 5, 1877.

To all whom it may concern:

Be it known that I, ALBERT FICKETT, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Machine for Grinding Wood into Paper Stock; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a top or plan sectional view of my invention. Fig. 2 is an end elevation of the same, looking in the direction of the arrow in Fig. 1.

The object of my invention is to disintegrate fiber from wood for paper-stock, in a more simple, rapid, (with a given amount of power,) and economical manner than heretofore practiced.

Its nature consists in a peculiar construction of a grinding apparatus for that purpose.

The cylindrical shell A is formed upon the hollow shaft A′, or it may be made separate. It is driven by the pulley P, and is provided inside with one or more annulars, C, of stone, having their inner surface corrugated or channeled either longitudinally or spirally. The flange or collar B holds the stones or annulars C in place by being secured by bolts, or otherwise, to the open end of the cylindrical shell A.

The annulars C are firmly secured within the cylinder A by screw-bolts *s*. If preferred, they might be held in place by several dowels in the fixed head H, and the flange B, and in each alternate annular.

The shaft A′, Fig. 1, revolves in pillow-blocks S, which are attached to the bed-plate G.

The table D is suspended within the grinding-cylinder from the standard S′, and as near as practical to the grinding-surface, in order to prevent the separation of slivers from the strips instead of fibers.

The guides *c* are attached to this table, and are made adjustable laterally at their outer end by clamping-screws *a*. By this means the wood may be presented to the grinding-surface, more or less diagonally, across the grain, as may be desired.

The plate F is fixed to the bar E, which is attached to the table D. This plate is hung at a proper distance above the table to admit or receive the strips of wood in the space formed between them and the guides *c*, and the grinding-surface. This plate F acts as a table on the side where the grinding-surface is moving upward, and keeps the strips that are being ground in place, and, as in the case of the table D, must just clear the grinding-surface for the same purpose.

The size of the strips of wood may be one and a half by three inches, and of any convenient length. Cuttings of less size may be placed, several together, on the table and ground, and thereby save cutting and waste, which is lost in the use of other pulp-grinding engines.

The water-pipe T is inserted into the machine through the hollow shaft A′, and that portion within the machine is perforated, to admit of a constant shower being thrown within the machine to free the grinding-surface, and all parts within the cylinder from the ground stock. The passage of this current of water through the pipe in the hollow shaft A′, keeps it from heating, which would otherwise be very liable to occur.

A much higher speed can be sustained, with safety, in this machine, than in other wood-grinding or pulp-engines employing a stone-grinding surface, the stones in this case being thoroughly prevented by the shell A from displacement or bursting by the centrifugal force.

It will be seen that, by employing a concave grinding-surface the edges of the strips acted upon are thereby ground cylindrical or convex instead of concave in cross-section, as heretofore practiced, and this form renders them much stronger as they become reduced, and consequently scarcely ever liable to break off in slivers at all, they being wholly reduced to fibrous pulp.

Any suitable feeding apparatus, to be operated automatically, or otherwise, may be used.

What I claim as my invention is—

1. As an improvement in wood-pulping engines or grinders, the cylindrical case or shell A, provided with one or more stone annulars,

C, constructed and arranged to operate substantially in the manner and for the purposes set forth.

2. In combination with the grinding-cylinder, constructed substantially as shown and described, the table D, and guides or gages *c*, for the purposes set forth.

3. In combination with the internally-grinding cylinder, the guides *c*, having their outer end made adjustable, substantially as shown and described, for the purpose of permitting the wood to be presented more or less diagonally to the grinding-surface, as set forth.

ALBERT FICKETT.

Witnesses:
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