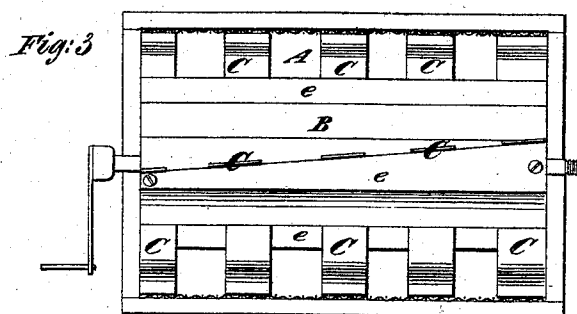
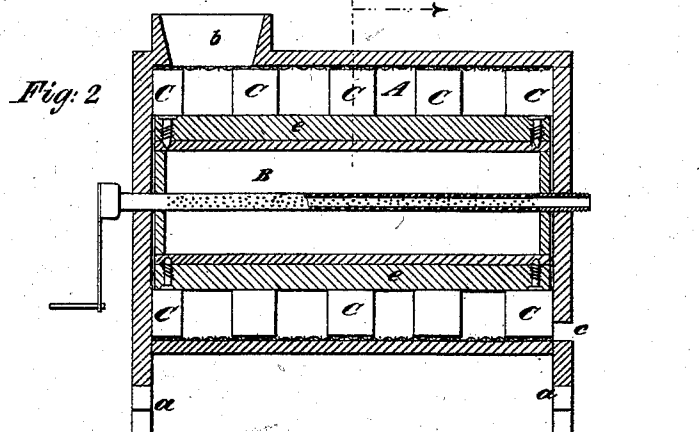
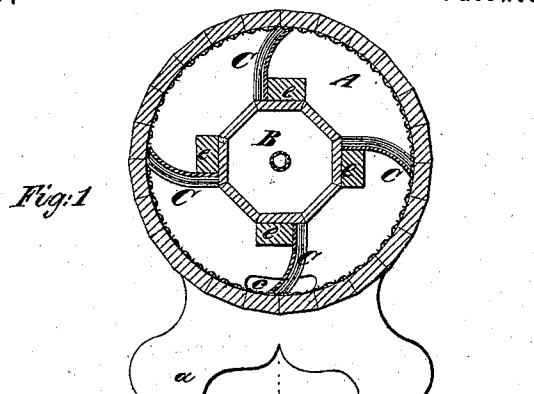


A. T. STURDEVANT.
Manufacture of Paper Stock.

No. 143,940.

Patented Oct. 21, 1873.



Witnesses
Fred. H. Hume
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UNITED STATES PATENT OFFICE.

ALFRED T. STURDEVANT, OF MOUNT PLEASANT, NEW YORK.

IMPROVEMENT IN THE MANUFACTURE OF PAPER-STOCK.

Specification forming part of Letters Patent No. **143,940**, dated October 21, 1873; application filed January 30, 1873.

To all whom it may concern:

Be it known that I, ALFRED T. STURDEVANT, of Mount Pleasant, in the county of Ulster and State of New York, have invented an Improvement in the Manufacture of Paper-Stock, of which the following is a specification:

This process consists in reducing wood shavings or cuttings to a fibrous condition for paper-stock, or in the further reduction of fibers partly reduced by any other process, by rubbing them over a reticulated or other rough surface or bed by elastic rubbers without passing the fibrous particles through such surface or bed. It may be used either alone or in connection with a process for which Letters Patent were granted to me July 16, 1872. The machine I purpose to use in carrying out my invention consists of a cylinder lined with wire-gauze, or other material presenting a rough surface, and series of elastic rubbers arranged on a drum revolving within the cylinder.

Figure 1 in the accompanying drawing is a transverse section of this machine. Fig. 2 is a longitudinal section of the same, and Fig. 3 is a plan of the machine with its hood or cover removed.

Similar letters of reference indicate corresponding parts in the several figures.

A is the cylinder of the machine. It is made in two parts hinged together, one being supported on legs *a a* and the other hinged to it. Both are lined with wire-gauze, but any other material or substance presenting a rough surface may be substituted for it. The cover or upper half of the cylinder is furnished near one end with a hopper, *b*, and in the opposite end of the lower part of the cylinder there is a hole or escape-opening, *c*. B is the drum, on which the rubbers are arranged. It is represented as having a series of rubbers, C C, on each of four sides. It may, however, be furnished with more or fewer series. Each set

or series of rubbers is secured to the side of a lug, *e*, inclined to the axis of the drum, so that they never rub together in a line axial to the cylinder. By this means the wood shavings or cuttings fed into the hopper as they are rubbed are fed up toward the escape-opening in the opposite end of the cylinder. The rubbers C C may be made of india-rubber or steel, or brushes may be used, and in some cases brushes may be used in connection with the rubbers. The wire-gauze or other substance used may be made gradually finer toward the escape-opening, so that the particles to which the wood cuttings are reduced will gradually decrease in size till delivered from the machine. The shaft of the drum B consists of a pipe, which is perforated within the drum to provide for the admission of steam thereto when desirable. The wood shavings, cuttings, or fibers to be reduced are introduced into the cylinder through its hopper, and are reduced or disintegrated by attrition produced by rubbing them on the lining of the cylinder. The cuttings, shavings, or fibers may be worked either wet or in the natural moist state of the wood, or dry. When wet or moist, steam is admitted to the drum to dry the cuttings while being worked.

I claim—

1. The process of reducing wood cuttings, shavings, or fibers to a condition to be worked into paper-pulp by rubbing them over a rough surface or bed by means of elastic rubbers without passing them through such surface or bed, substantially as herein described.

2. The combination of the cylinder A, having a rough lining or surface, and the elastic rubbers C C, arranged as herein described, substantially for the purpose set forth.

ALFRED T. STURDEVANT.

Witnesses:

FRED. HAYNES,
MICHAEL RYAN.