

UNITED STATES PATENT OFFICE.

ALBERT FICKETT, OF ROCHESTER, NEW YORK, ASSIGNOR TO HIMSELF AND CHARLES T. MOORE, OF SAME PLACE.

IMPROVED PROCESS OF PREPARING WOOD FOR PAPER-STOCK.

Specification forming part of Letters Patent No. 92,027, dated June 29, 1869.

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 certain new and useful Process for Preparing Wood for Paper-Stock; and I do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention, the nature of which will be understood by reference to the specification, is to prepare wood for the manufacture of paper-stock in such a manner as to occasion no loss of material, and that the stock so obtained shall be uniform and free from impurities, the length of the fiber being regulated as desired.

To enable others to understand my invention, I will describe it.

I may use any kind of wood in my process, the softer and more fibrous varieties being more easily worked and better for the purpose—such as bass-wood, white poplar, or white-wood. After removing the bark from the logs, I cut them transversely into blocks or lengths varying from one-quarter of an inch upward, according to the length of fiber required. This operation may be performed by a thin saw, or by a cutter, so arranged as that the chips or dust from it may also be used for paper-stock. The blocks thus obtained are next steamed a proper length of time, for the purpose of softening the material and dissolving any gummy or resinous matter contained in it, and afterward subjected to a heavy pressure applied longitudinally with the grain. This operation crushes or doubles over the material in such a manner as to split apart and perfectly separate the fibers, after which it may be conveyed to the beating-engine to be further reduced, and mixed in the usual manner. This crushing process may be performed by a set of corrugated matched rollers, by a pair of jaws opened and closed by cams and levers, by a hydrostatic press, or by any other suitable mechan-

ical means by which the fiber is separated by longitudinal pressure.

In the methods hitherto used for reducing wood to paper-stock, the material has been separated by grinding with stones or rasping with steel cutters, and a large proportion of it was made so fine as to be valueless. Such processes are also slow and expensive, and the product mixed with grit from the stones or impurities from knots or other imperfections in the wood, which also deteriorates from its value. Other expensive processes have been introduced, consisting in the use of alkalis or other chemicals.

By my process nothing is wasted but the bark of the tree, the wood being perfectly reduced to a soft gloss-like fiber, the length of which can be regulated as desired, and all imperfections in the material removed before crushing.

I attain, also, great simplicity and cheapness in the manipulation of the stock, there being no chemicals or chemical processes necessary.

If necessary, I may arrange a primary beating-engine to receive the material from the crusher, for the purpose of further separating the fiber before going to the beating or washing engine proper.

The logs may be cut diagonally across the grain, if desired.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. As an improvement in the preparation of wood for the manufacture of paper-stock, the process of separating the fiber by pressure applied longitudinally with the grain, for the purposes set forth.

2. The process of producing paper-stock from wood, substantially as herein described.

ALBERT FICKETT.

Witnesses:

A. H. BILLINGS,
F. H. CLEMENT.