

UNITED STATES PATENT OFFICE.

WILLIAM R. PATRICK, OF MARINETTE, WISCONSIN, ASSIGNOR OF ONE-HALF HIS RIGHT TO ANDREW C. MERRYMAN, OF SAME PLACE.

IMPROVEMENT IN PROCESSES OF OBTAINING FIBER FROM WOOD FOR PAPER-PULP.

Specification forming part of Letters Patent No. **200,085**, dated February 5, 1878; application filed September 22, 1877.

To all whom it may concern:

Be it known that I, WILLIAM R. PATRICK, of Marinette, in the county of Oconto and State of Wisconsin, have invented a new and valuable Improvement in Paper-Pulps; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to the manufacture of wood pulp for paper; and it consists in boiling the pulp, after it has been ground, either with or without alkali, for the purpose of removing all resinous or foreign matter from the pulp, as will be hereinafter more fully set forth.

In my process for reducing wood to pulp the wood is first cut in lengths suitable for the grinders, and these pieces are placed sidewise to the stones or grinders, to have the fibers torn off lengthwise of the wood.

The wood being thus, by grinding, reduced is called "half-stuff." It is then passed direct from the grinders to a wet-machine, thence into the well-known rotary boiler used in paper-mills. Here I add one pound of soda-ash to every one hundred pounds of wood pulp. After charging the boiler, half of which is water, the man-holes are closed and contents are boiled, not steamed, for twelve hours or more, for the purpose hereinafter mentioned.

Some stock needs no alkali, and is therefore boiled only in clear water.

This boiling of the pulp is for the purpose of removing all resinous or foreign matter it may contain, also softening and removing the incrustating substance of the wood.

By thus boiling the wood pulp I am enabled to use more of it in connection with other stock, and it gives a much better finish to the paper.

The following is the entire process of preparing the wood for paper-pulp: The wood being cut and ground, the pulp passes from the grinding-machine and is conveyed to a wet-machine, similar to those used in a paper-mill.

This presses the water out of it. From this it is conveyed to the boiling apparatus, where it is boiled, for the purposes above mentioned. After boiling, it is conducted to drainers, to relieve it of the water or liquor it accumulates while boiling. From here it is conveyed to the washing-engine, and after being thoroughly washed and rebeat it is conveyed to a stuff-chest below. From this chest it is pumped to another wet-machine, and immediately run into the form of board, ready to be sold as paper-stock.

The advantages of my process are: The half-stuff is taken from the grinders and treated the same as all paper-makers treat jute; it requires no extra outlay for boilers; and the common open tub, without pressure, can be used.

I am aware that it is not broadly new to subject the fibers of wood to the action of a solution of alkali, and also subjecting the fibers of wood, when mixed with a solution of alkali, to a degree of heat not above the boiling-point. Therefore I lay no broad claim to such invention; but

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

The process of preparing wood for paper-pulp, which consists in removing the fibers lengthwise of the wood, conveying it to a wet-machine, and boiling the half-stuff, either with or without alkali, for the purpose of removing all resinous or foreign matter from the pulp, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM R. PATRICK.

Witnesses:

J. B. FAIRCHILD,
HIRAM O. FAIRCHILD.