

United States Patent Office.

C. K. MARSHALL, OF NEW ORLEANS, LOUISIANA.

Letters Patent No. 70,872, dated November 12, 1867.

IMPROVEMENT IN PREPARING WOOD TO BE USED IN THE MANUFACTURE OF PAPER AND FOR OTHER PURPOSES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, C. K. MARSHALL, of New Orleans, parish of Orleans, and State of Louisiana, have invented a new and useful Article of Manufacture and Commerce, which I term "Lignine Flour," and which can be advantageously used as the chief ingredient in the manufacture of paper; and I do hereby declare that the following is a full, clear, and exact description of the same.

The nature of my invention consists in the production of a new article of manufacture and commerce, which I term "lignine flour."

In order to enable others skilled in the arts to which my invention is applicable, and in which it can be advantageously used, thoroughly to understand the same, I will proceed fully to describe how a fine quality of the flour can readily be obtained, as well as the method of using the flour when the same is employed, as it can successfully be, as the chief ingredient in the manufacture of paper.

To obtain the flour, I take chips of the planing machine, or the ordinary saw-dust, articles in themselves of no value, and grind them to a powder in a burr or steel-mill; a flour as fine can thus be procured as that produced by bolting wheat. When the chips and saw-dust to be ground are obtained from oak or other hard wood, it may be necessary, as also advantageous, in order properly to dry them, to subject the same to a slight heat. This, however, is entirely unnecessary when the material to be used has been obtained from any of the species of pine, as it can be thoroughly dried and properly prepared without resort being had to the heating process. In some cases, as, for instance, in the manufacture of white paper, it may be necessary to bleach. This can readily be done by placing the material in a suitable vessel, and boiling the same for a short period. When the chips and saw-dust are obtained from a wood of dark texture, such as walnut, it may be necessary, in order entirely to free the same of coloring matter, to add to the water in which the material is to be boiled a small quantity of chloride of lime. It is a matter of entire indifference whether the bleaching is done before or after grinding, the result will be precisely the same.

The operation of grinding the chips and saw-dust, as well as discharging the flour, is much facilitated by slightly moistening the material while passing through the mill. This can readily be done by attaching to the mill a small water-jet or spout.

I have thus fully explained one method of obtaining the "lignine flour;" but it will readily occur to any one skilled in the art, that an equally good article might be obtained by pulverizing, as also by other means.

In order to manufacture paper, I take about seventy per cent. of the flour, prepared as above described, and mix the same with about thirty per cent. of paper-pulp, such as is obtained from linen, cotton, hemp, or any other fibrous vegetable matter. Thoroughly mix the pulp and flour together; subject the same to pressure and heat, in every regard as you do the ordinary pulp in the manufacture of paper, and a good, durable, and cheap article of paper is obtained.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture and commerce, wood-chips and saw-dust, reduced to a fine flour or powder, substantially as described.

2. The use of the flour, obtained as above described, as an ingredient in the manufacture of paper.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

C. K. MARSHALL.

Witnesses:

JOHN S. HOLLINGSHEAD,

JOHN D. BLOOR.