

United States Patent Office.

JOEL TIFFANY, OF ALBANY, NEW YORK.

Letters Patent No. 67,229, dated July 30, 1867.

IMPROVED PROCESS OF TREATING PAPER STOCK TO MAKE PULP.

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

TO WHOM IT MAY CONCERN:

Be it known that I, JOEL TIFFANY, of the city and county of Albany, and State of New York, have invented a new and improved Process of Treating Paper Stock preparatory to pulping the same; and I do hereby declare that the following is a full and exact description of the same.

The nature of my improvement consists in my method of applying the caustic liquor to the stock being treated.

My stock is first cut into short lengths or otherwise broken up, mashed, crushed, or ground, is soaked or steamed, as may be desired, is packed into my boiler, when my improved process commences. I have my boiling liquor prepared in a separate closed vessel capable of sustaining a high internal pressure with safety. I heat such liquor to as high a degree of temperature as is ever desirable to do during the process of boiling, and keep it in that heated state. I, having charged my boiler with the amount of stock to be treated, close the same air and steam-tight. I then proceed to exhaust the air therefrom by any of the well-known processes of exhausting air from vessels, and when this is sufficiently done, I then open a stop-cock connecting my boiler with the vessel in which my boiling liquor is ready prepared and highly heated, as above set forth, and the hot liquor rushes in to supply the vacuum caused by the exhaustion of the air, filling all the pores and cells of the stock with a highly heated and intensely effective liquor, the result of which is that every part of the stock is acted upon simultaneously and uniformly, and the time required to complete the reduction of the stock is largely reduced, producing an improved fibrous pulp, saving likewise a large per cent. of the stock destroyed by the ordinary methods of treating the same. Immediately after running into the boiler, the boiling liquor, as above described, the pressure within the boiler may be speedily increased to any desirable amount by the use of an atmospheric or pneumatic pressure, applied by means of a forcing-pump. This may sometimes be desirable, according to the close or refractory nature of the stock being treated. If a pressure higher than one hundred and ten pounds to the inch is found desirable, the additional pressure should be obtained by pneumatic means, as a heat much higher than that indicated by one hundred and ten pounds tends to injure the quality of the fibre.

Having thus described the nature of my invention, I will proceed to set forth my claims.

I do not claim the mode of preparing the stock by previously soaking or steaming the same before boiling, nor do I claim the use of means to produce an air-vacuum in the boiler after the same is charged with the stock, nor the use of pneumatic pressure in the treatment of the same. But what I do claim as my invention, and desire to secure by Letters Patent, is—

The introduction and use of a highly heated boiling liquor into the stock enclosed in a close boiler immediately after the air has been exhausted therefrom, in combination with the vacuum produced within the boiler by such exhaustion of the air, substantially in the manner and for the purpose above described.

I also claim the above process, in combination with the use of atmospheric or pneumatic pressure, substantially in the manner and for the purpose above described.

JOEL TIFFANY.

Witnesses:

JOSEPH BECSEY,
CHAS. L. COOMBS.