

UNITED STATES PATENT OFFICE.

FRANCIS N. DAVIS, OF BELOIT, WISCONSIN.

IMPROVEMENT IN THE MANUFACTURE OF PAPER BOARD FOR BUILDINGS, &c.

Specification forming part of Letters Patent No. 128,863, dated July 9, 1872.

To all whom it may concern:

Be it known that I, FRANCIS N. DAVIS, of Beloit, in the county of Rock and State of Wisconsin, have invented a new and useful Improvement in the Manufacture of Building Paper and Board; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention has for its object to improve the manufacture of building paper and board made in continuous lengths, saturated, coated, or otherwise treated with tar, resin, oleaginous substances or compounds, or with any substance, compound, or solution that will render it fire-proof or damp-proof, or both, or that will harden, finish, ornament, or strengthen the article and render it a more desirable product for general use.

In the manufacture of these different products it is usual to pass the paper or board from the drying-rolls of the machine upon which it is made through or in contact with the substance by which it is treated, and thence to the winding device, by which it is wound into rolls for the market. This process is found objectionable for the reason, first, that inasmuch as the paper passes directly from the treating material or substance to the winding-rolls it does not become thoroughly dried, and the surfaces therefore adhere to each other in the roll to such an extent that large pieces are torn out when the paper is unrolled for use, and the surfaces are consequently injured or destroyed. Secondly, the treating material is not hardened or forced into the paper or board between the driers and the winding-rolls, but remains upon its surface in an undried condition, or is pressed off in considerable quantities during the process of rolling, leaving the surface rough, unfinished, and not homogeneous. Thirdly, the short time occupied by the paper in passing from the treating material to

the winding-rolls precludes the possibility of using any treating substance that is specially adhesive, or requires thorough drying before the product is wound into rolls, which substances are often most desirable for certain applications of the paper.

To overcome these objections, among others, my invention consists in the interposition of a series of drying-rolls between the point at which the treating substance is applied and the final winding-rolls; or, in other words, in passing the paper or board from the first driers through or in contact with the treating substance, and from thence over a second series of drying-rolls before being wound up. By this arrangement the paper is thoroughly dried, hardened, and finished before being wound for the market, rendering the employment of the most adhesive treating substances both practicable and easy. It possesses the additional merit of imparting a uniform and homogeneous finish to the surfaces, and effectually prevents their adhering to each other in the roll.

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

1. The process of treating building board or paper by passing it through driers interposed between the point at which the treating material or substance is applied and the final winding-roll, substantially as described, for the purpose specified.

2. In a machine for manufacturing continuous lengths of building paper and board, I claim the arrangement of a series of driers between the treating point and the final winding-roll, substantially as described, for the purpose specified.

FRANCIS N. DAVIS.

Witnesses:

A. C. HUTCHISON,
L. J. LANE.