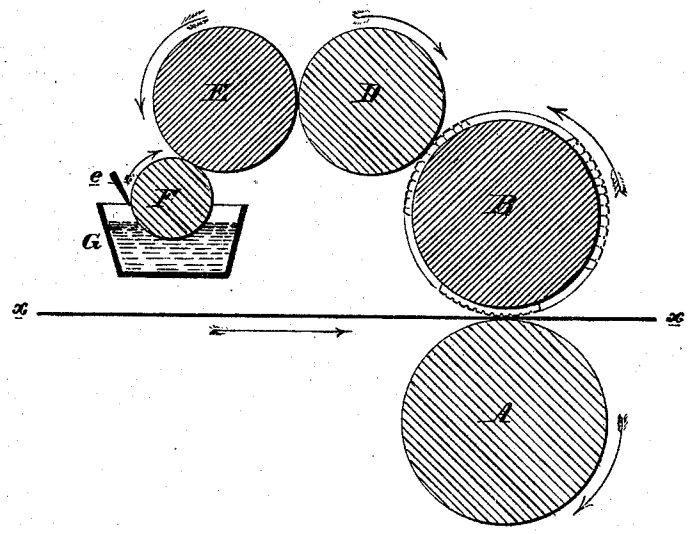
W. ADAMSON.

Improvement in Manufacture of Printed Sand and Emery Paper.

No. 128,574. Patented July 2, 1872.



WITNESSES { Wm. A. Steel
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by his Attys
Howson & Howson

UNITED STATES PATENT OFFICE.

WILLIAM ADAMSON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN THE MANUFACTURE OF PRINTED SAND AND EMERY PAPER.

Specification forming part of Letters Patent No. 128,574, dated July 2, 1872.

Specification describing Improvement in the Manufacture of Printed Sand and Emery Paper, invented by WILLIAM ADAMSON, of Philadelphia, Pennsylvania.

Improvement in the Manufacture of Printed Sand and Emery Paper.

My invention consists of sand or emery paper, or emery-cloth, the back of which has been printed while the paper passed through the paper-making machine, and before it reached the drying-cylinders and calender-rolls, and before the application of glue and sand or emery, the surface of the paper being consequently free from all projections and inequalities which would interfere with the proper distribution of sand or emery over its surface.

The figure in the accompanying drawing is a diagram illustrative of apparatus by which my invention may be carried into effect.

In manufacturing sand and emery paper it is customary to print on the back characters indicating the quality of the manufacture, as regards the coarseness or fineness of the sand or emery applied to the paper; also, to print on the back the names of the manufacturers. To thus print the back of the paper after the sand or emery has been applied to the front must of necessity render the sanded surface uneven, owing to the pressure of the type, and in printing the paper after it has been calendered, the type necessarily forms on the front face projections which interfere with the even distribution of the granular substance over the surface. To obviate these difficulties I print the paper as it is passing through the paper-machine, the printing being accomplished after the paper has been deprived of most of the moisture, and before it reaches the drying-rollers.

In the accompanying diagram, *x x* represents the paper traversing in the direction of the arrow from the rollers, which express the surplus moisture toward the drying-cylinders, the paper while in this position being yet moist and tender, but sufficiently strong to receive the impression. The paper passes between a roller, A, clothed with gum-elastic, or other equivalent yielding material, and a roller, B, on which is the printing-type. These rollers A and B are so geared to any rotating shaft of the paper-machine, that their circumferences will traverse at the same speed as the paper *x*. The ink is obtained from a trough, G, by a roller, F, which transfers the ink to a distributing-roller, E, the latter transferring its ink to the inking-roller D, which revolves in contact with the type on the roller B, the latter being of such diameter and the type so distributed over its surface that the paper will be printed at proper intervals, the printed matter appearing alike on all the sheets into which the paper may be subsequently cut. A blade, E, of steel or other suitable material, may bear against the roller F, to prevent the latter from taking up too much ink from the trough. The roller D may be driven by frictional contact with the roller B, the roller E in like manner deriving its motion from the roller D, and communicating its motion to the roller F.

The above-described mechanism may be situated in any of the ordinary paper-machines, between the drying-cylinders and the rollers by which the superfluous moisture is expressed from the paper, so that the indentations made by the type on the paper will be entirely removed by the drying-cylinders and final calendering, and the paper as it leaves the machine will have a uniformly smooth surface for receiving the glue and sand, or ground flint or emery.

I claim as my invention—

1. The typographical printing of paper in a paper machine before the said paper reaches the drying-cylinders, substantially as described.

2. Sand or emery paper, or emery-cloth, the back of which has been printed before the drying or calendering of the paper.

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

WILLIAM ADAMSON.

Witnesses:

H. HOWSON,

CHS. F. A. SIMONIN.