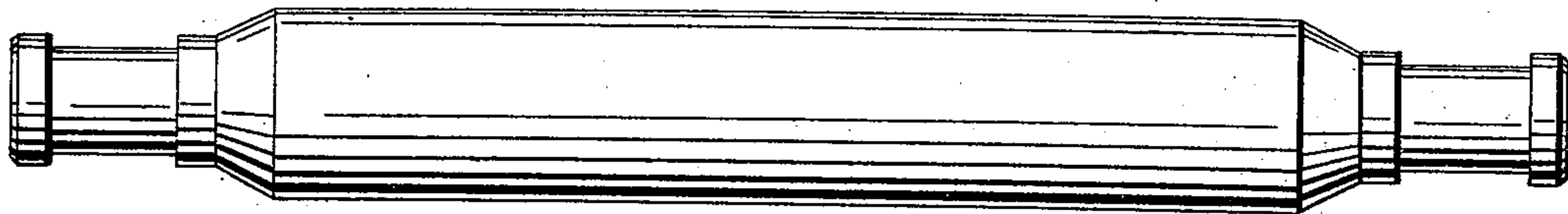


H. J. Smith.
Paper Mach.
N^o 90,695. Patented Jun. 1, 1869.



Witnesses.

ac Bradley.
Jno. D. Patten

Inventor.

H. Julius Smith
By his attorney
Chas. F. Pansbury

United States Patent Office.

H. JULIUS SMITH, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO
HIMSELF AND RICHARD SMITH.

Letters Patent No. 90,695, dated June 1, 1869.

IMPROVEMENT IN PAPER AND PRINT-ROLLERS.

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, H. JULIUS SMITH, of Boston, in the county of Suffolk, and State of Massachusetts, have invented Improved Paper and Print-Rollers; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which the figure represents a paper-roller made of nickel, as hereinafter set forth.

The improvement consists in making rollers either wholly of nickel, or of metal coated with nickel, by electro-deposition or otherwise, said rollers being intended for use in the manufacture of paper, the printing of cloths, or other analogous arts, in which rollers possessing hardness, smoothness, and non-corrosibility are important to the perfection of the work.

The advantages which nickel possesses for the purposes specified are, first, hardness; second, smoothness; third, non-corrosibility; and, fourth, cheapness. It can be made as hard as tempered steel, and is then little liable to be scratched, or dented, a quality of particular importance in paper-making, since such dents and scratches blemish the surface of the paper. Its smoothness enables it to impart a fine finish to the surface of the articles subjected to its action. Its non-corrosibility enables it to resist the attack of acids and other

chemicals in contact with which it may be used, thus preserving the integrity of its surface, and preventing the roughness and stains which would result from corrosion and be imparted to the articles produced by its use. Its cheapness gives it a preference over hard-rubber rolls or the ordinary chilled cast-iron calendars.

For print-rolls, the designs can be engraved in soft metal, which is to be afterward plated with nickel, in any known mode.

Having thus described my improvement,

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

As a new article of manufacture, and an improvement in the arts of paper-making, cloth-printing, and other analogous arts, the rollers made, as hereinbefore specified, of nickel, or of metal coated with nickel by electro-deposition or otherwise.

The above specification of my said invention signed and witnessed at Boston, this 30th day of April, A. D. 1869.

H. JULIUS SMITH.

Witnesses:

CHAR'S C. TILDEN,
GEO. H. MORSE.