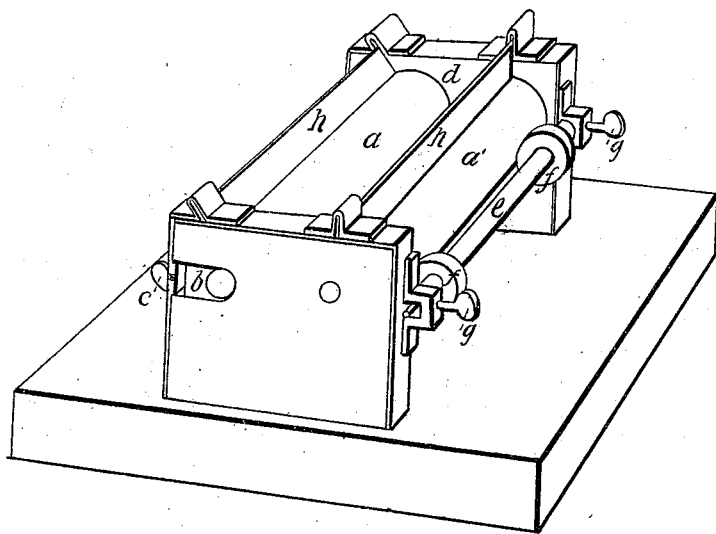


J. Ames.
Sizing Paper.
N^o 495. Patented Dec. 1, 1837.



UNITED STATES PATENT OFFICE.

JOHN AMES, OF SPRINGFIELD, MASSACHUSETTS.

MACHINE FOR SIZING PAPER.

Specification forming part of Letters Patent No. 495, dated December 1, 1837; Reissued October 22, 1840, No. 27.

To all whom it may concern:

Be it known that I, JOHN AMES, of Springfield, in the county of Hampden and Commonwealth of Massachusetts, have invented a new and useful Improvement in the Method of Sizing Paper by Machinery, called a "Sizing-Machine," of which the following is a full and exact description.

At a convenient height I place two cylinders in a horizontal position and parallel to each other turning on their respective axes. Sec. *a, a'*, in the drawing I make one cylinder *a*, of metal, about five and half feet long and about nine inches diameter, with a polished surface—the (*a'*) other of wood, of the same length but of a diameter sufficient to keep it from springing, and consequently the diameters of the cylinders may vary in due proportion to their length in all cases. One of the cylinders rests on movable boxes *b*, which are regulated by screws *c* or levers—which are so adjusted as to carry the cylinder, that they act upon, into close contact with the other cylinder when operating. The paper is brought in a continuous sheet from the paper machine, over a cylinder whose axis is parallel to the axes of the other cylinders, and which is elevated above the others and so placed that the sheet descending perpendicularly passes between the first named parallel cylinders—the motion of the cylinders being such as to carry down the paper between them. That part of the descending surface of each cylinder above their line of contact forms with the descending sheet a trough for the sizing. The ends of the sizing cylinders run against a flat surface *d*, making a joint close enough to prevent the escape of the sizing. These troughs are filled or nearly so with the sizing prepared in the usual way.

In order to keep up the supply in the troughs I place a vat or cistern, containing the sizing in a position higher than the sizing cylinders, having tubes discharging the requisite quantity into the troughs. Beneath the sizing cylinders is placed a trough

to receive the sizing that passes down between the cylinders at places when not in close contact, and it is pumped back into the upper troughs, or into the cistern. By means of this dripping the edges of the sheet are sometimes, especially in cold weather, apt to be smeared by the sizing. To prevent this I put a strip of fine linen or thin silk around the wooden cylinder *a'*, (when one is used) when the edges of the sheet pass. Thin strips serve to make a closer joint, and prevent the escape of any sizing near enough to touch the edge, after passing, and being pressed, between the cylinders. If metal cylinders are used, in order to obviate the same difficulty I place near to the outer surface of the cylinder which leads off the paper from the sizing machines, and corresponding to its axis a shaft, *e*, on which are placed wheels *f, f*, with rims two or three inches wide. The shaft is regulated by screws *g*; or lever. The rims of the wheels, which are placed so as to correspond with the edges of the sheet, are pressed with proper force against the cylinder, which turns them by the friction. The edges of the paper are pressed and freed from the sizing that may have attached to them.

To clear the cylinders and enable them to present a smooth surface to the sheet I place upon each a scraper *h, h*, called a "doctor"—made of a strip of wood of the length of the cylinder, with an edge of about half an inch thick, covered with cloth. The edges of the doctors are pressed upon the cylinders with force sufficient to scrape off any scurf that may adhere.

What I claim as new and as my invention is—

The combination of the several parts of the above described machine in the manner specified for the purpose of sizing paper without the use of felting or jackets.

JOHN AMES.

Witnesses:

JOHN P. BREWER,
WILLIAM BLISS.