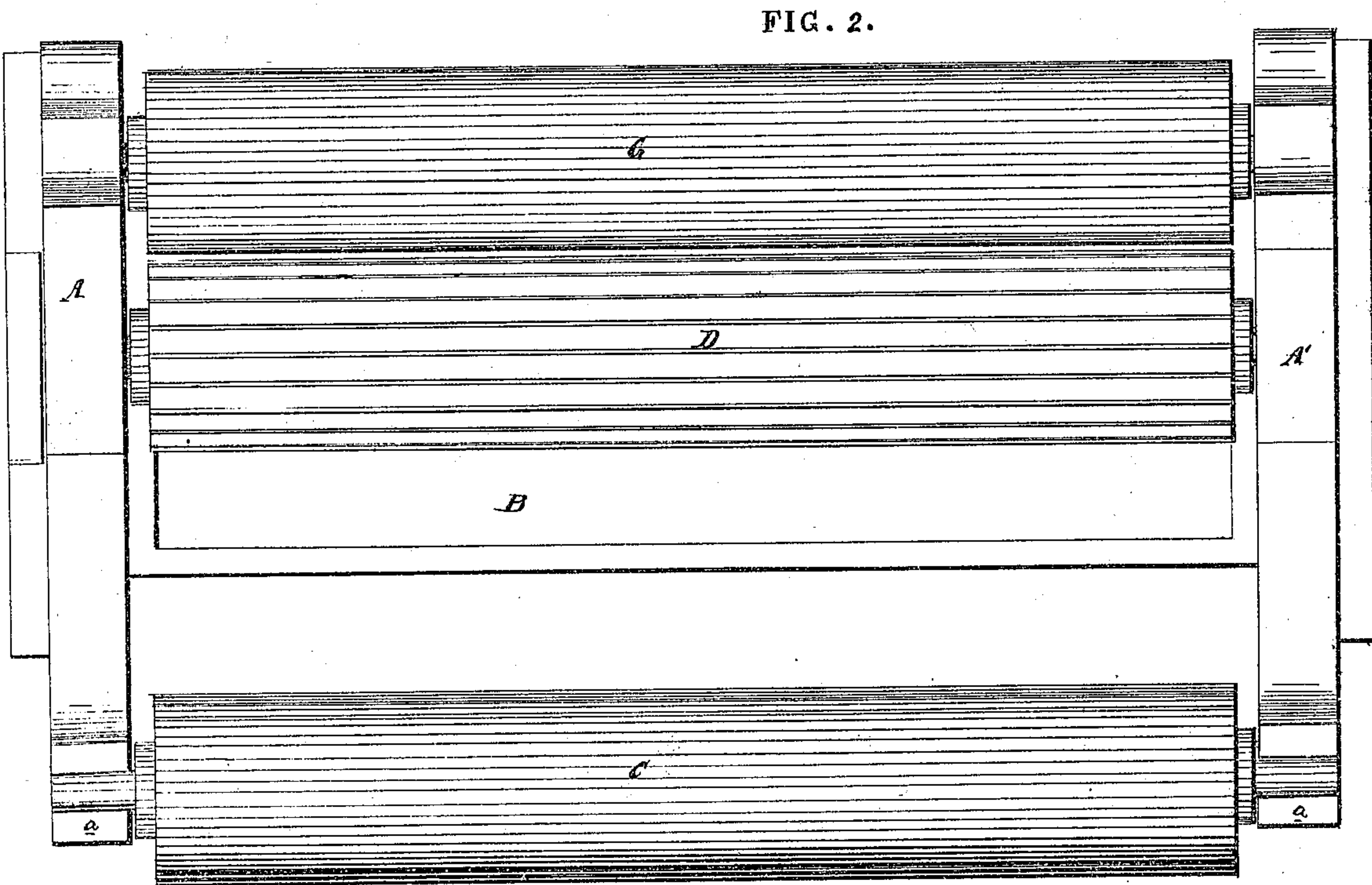
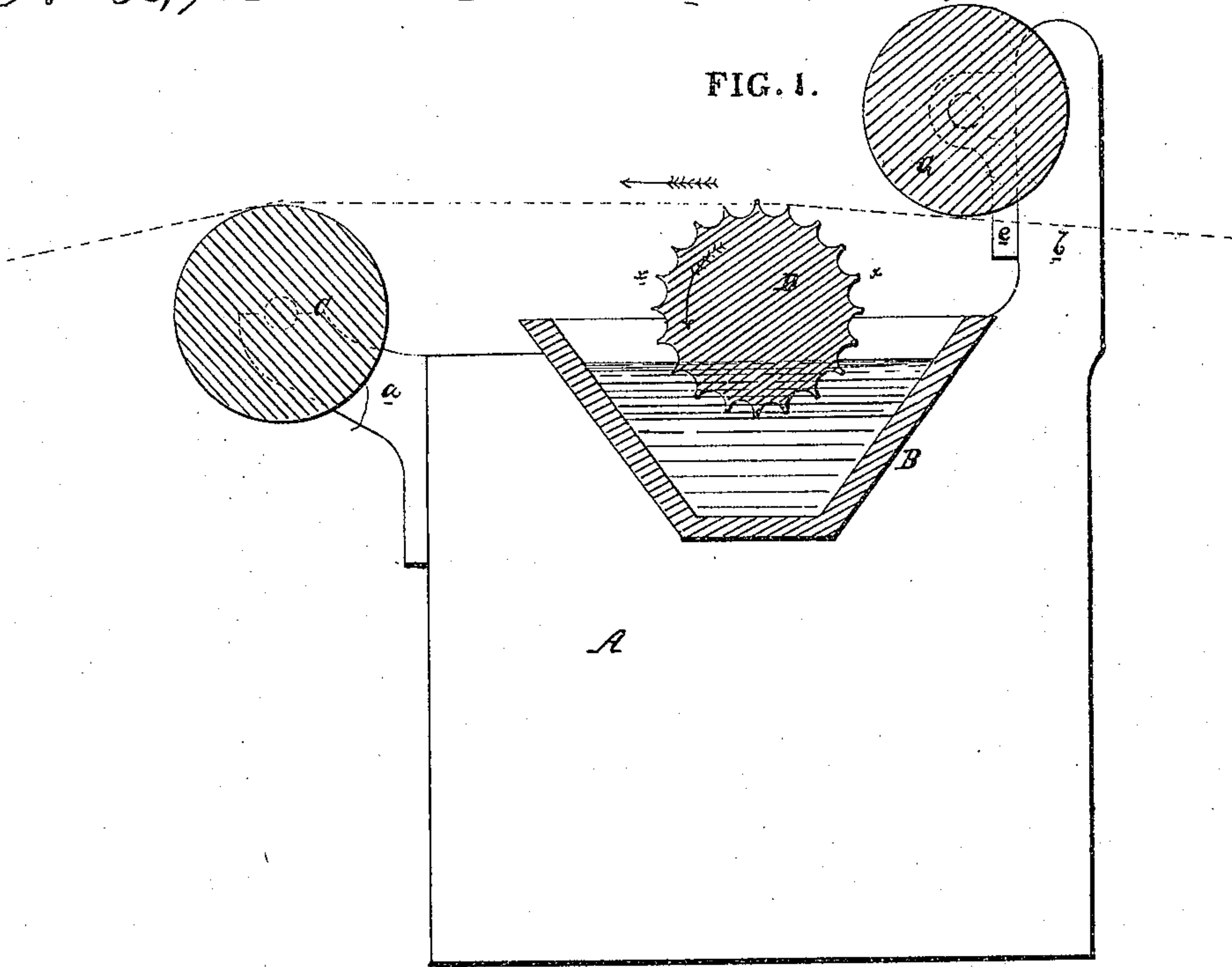


*R. Martin.*  
*Damping Mach.*  
*N<sup>o</sup> 30,788.      Patented Nov. 27. 1860.*



Witnesses { *Chas. Howson*  
*Saml. Harwood*

*Henry Howson*  
*Atty for R. Martin*



# UNITED STATES PATENT OFFICE.

RICHARD MARTIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND ALEX  
PRIESTLEY, OF SAME PLACE.

## MACHINE FOR DAMPING PAPER.

Specification of Letters Patent No. 30,788, dated November 27, 1860.

*To all whom it may concern:*

Be it known that I, RICHARD MARTIN, of the city of Philadelphia and State of Pennsylvania, have invented a new and Improved  
5 Apparatus for Damping Paper; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked  
10 thereon.

My invention consists of a revolving roller having a series of longitudinal flutes or grooves, in combination with two plain rollers, and a trough for containing water, the whole being arranged and operating substantially as set forth hereafter for the purpose of imparting to paper that uniform dampness necessary when the paper has to be glazed, used for ordinary printing, or for  
20 converting into wall paper.

In order to enable others to make and use my invention I will now proceed to describe its construction and operation.

On reference to the accompanying drawing which forms a part of this specification, Figure 1 is a vertical transverse section of my improved machine for damping paper, and Fig. 2 a ground plan.

A and A' are the opposite side frames of the machine and are connected together by the trough B.

C, D and G are three rollers of brass or other suitable material, the journals of the roller C turning in suitable brackets *a a* one of which is secured to each frame, the journals of the roller D turning in suitable boxes attached to the same frame, and the journals of the roller G turning in boxes *e e* secured to the projecting portions *b b* of the frames in such a manner as to be readily adjusted vertically.

In the surface of the roller D are cut a series of flutes or grooves so as to form a series of longitudinal projections *x x* the roller being so situated in respect to the trough that it shall dip to the extent of one quarter (or thereabout) of its circumference into a body of water which is maintained at a comparatively uniform level in the said  
50 trough.

The paper passes from the paper machine or from a roller around which it has been

wound in the direction shown by the red line Fig. 1 and pointed out by the arrow, under the roller G over the roller D and 55 over the roller C. A rotary motion is imparted to the roller D in the direction taken by the paper and pointed out by the arrow. The speed of the circumference of this roller should be equal to, or somewhat 60 greater than, the speed of the paper. As the fluted roller revolves each groove or flute takes up a body of water a portion of which remains lodged in the grooves as the latter are turned to a position directly un- 65 der the paper. This body of water in every flute or groove maintains that uniform supply of water on the ribs between the grooves which would not be preserved on simple revolving ribs between which there existed 70 no groove for the lodgment of water. As the paper is drawn forward in contact with the revolving roller D deposits of water in the form of transverse ribs or stripes, situated at equal distances apart, will adhere 75 to the under surface of the paper, and, as the paper passes over the roller C, the latter will cause the several transverse deposits of water to merge into each other so that by the time the paper has passed this roller C, 80 its under surface will have an uniform dampness imparted to it, a dampness gradually absorbed by the paper as it continues its progress.

As all paper has to be damped before being glazed by the calender it is important 85 that the moisture should be distributed equally throughout the surface of the paper. The usual process has been to cut the paper into sheets then to damp the latter by passing them through water, and then to pass 90 the sheets separately between the rollers of the calender, a process which involves the necessity of much tedious manipulation. A more recent process has been that of submitting a continuous traversing sheet to the action of jets of steam which have the injurious effect of rusting the machinery. Both of these evils are avoided by my above described apparatus which may be applied 100 with good effect to the damping of continuous sheets used in printing, or in the manufacture of wall paper. The apparatus may also be applied to the damping of sepa-

rate sheets of paper ready for printers use in which case endless tapes or bands may be readily applied to the rollers for the purpose of conveying the sheets through the machine.

More or less dampness may be imparted to the paper by the adjustment of the roller G, for should the boxes *e e* of that roller be lowered there will be more lap of the paper over the fluted roller and consequently more of the ribs of the latter in contact with the paper than when the roller G is raised. An increased dampness may also be imparted to the paper by causing the circumference of the roller D to revolve faster than the paper moves, in which case the transverse deposits of water on the paper will be of greater width than when

the circumference of the roller traverses at the same speed as the paper.

I claim as my invention and desire to secure by Letters Patent—

The revolving roller D having a series of longitudinal ribs *x* with intervening flutes or grooves, in combination with a trough B and the rollers G and C the whole being arranged substantially as set forth and applied to the damping of paper as specified.

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

RICHARD MARTIN.

Witnesses:

HENRY HOWSON,  
JOHN WHITE.