(Model.)

M. NEWTON.

Method and Apparatus for Calendering Paper.

No. 229,551. Patented July 6, 1880.

Fig. 2.

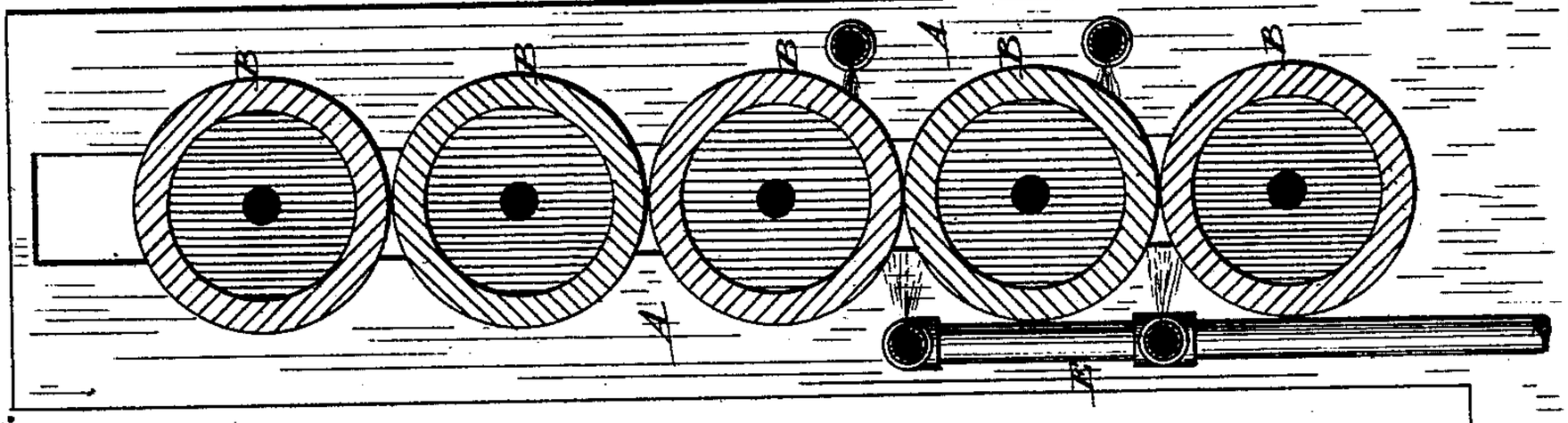
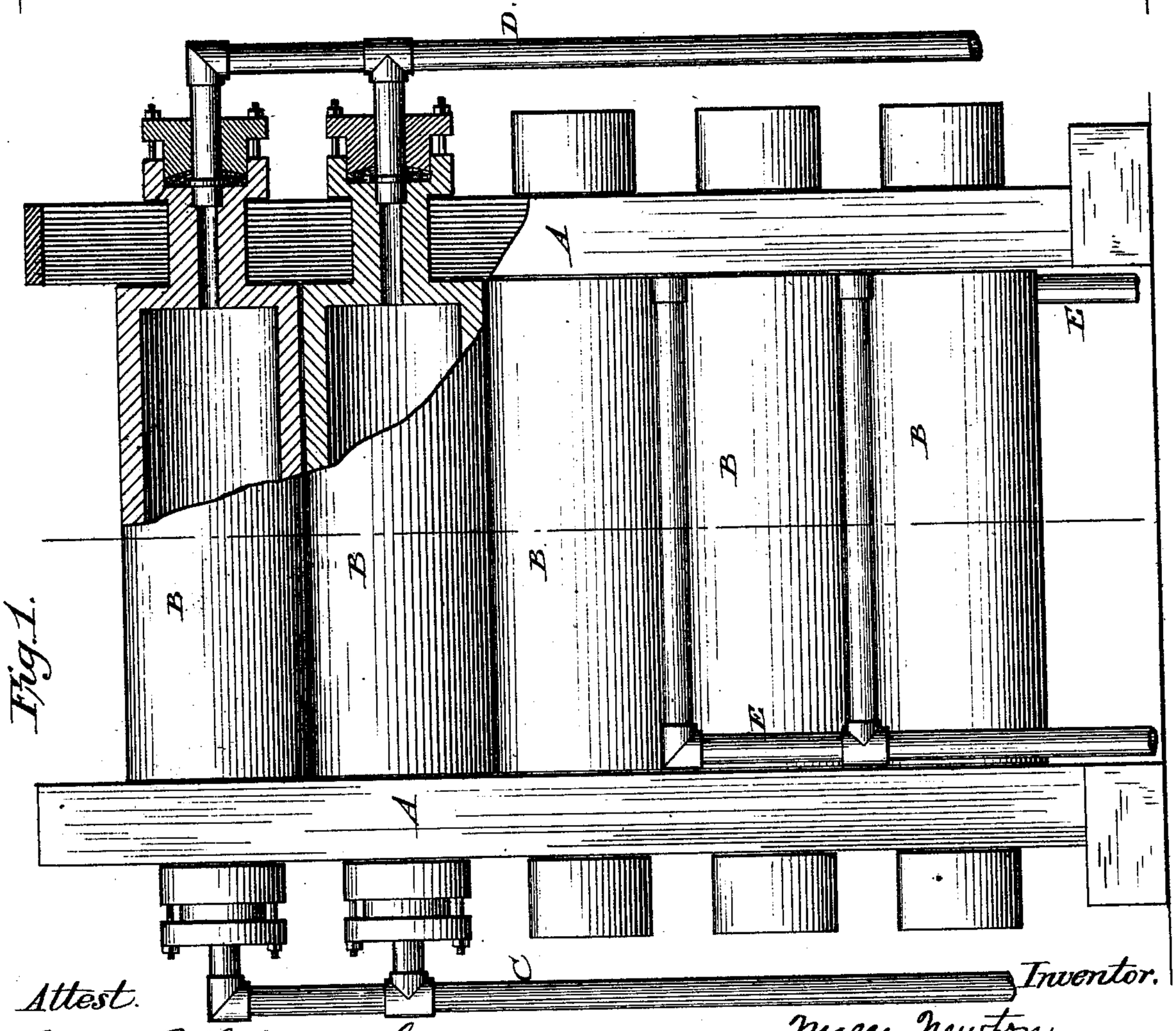


Fig. 1.



Attest.

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MOSES NEWTON, OF HOLYOKE, MASSACHUSETTS.

METHOD AND APPARATUS FOR CALENDERING PAPER.

SPECIFICATION forming part of Letters Patent No. 229,551, dated July 6, 1880.

Application filed June 4, 1880. (Model.)

To all whom it may concern:

Be it known that I, MOSES NEWTON, of Holyoke, in the county of Hampden and State of Massachusetts, have invented certain Improvements in Methods of and Apparatus for Calendering Paper, of which the following is a specification.

My invention consists in an improvement in the method of calendering paper and in the arrangement of the apparatus for its application.

The invention consists of perforated steam-pipes or equivalent steam-conductors so arranged as to deliver steam upon the exterior of the usual calender-rolls, in order to effect a moistening of the paper as it passes over and between the surfaces of the rolls, and of water-conductors communicating with the interior of the hollow calender-rolls and conveying water thereto and discharging it from the same or opposite end of one or more of the rolls.

The essential feature of the invention consists in the delivery of steam upon the surfaces of the calender-rolls and in conveying running water to the interior of the rolls and thence out again, causing the condensation of the steam upon the surfaces of the rolls, thereby producing a polished surface on the paper as it passes over and between the calender-rolls not produced by any other method.

The drawings represent the arrangement which I have ordinarily employed, and which I consider the best that can be used.

Figure 1 represents a front elevation of an ordinary stack or series of calendering-rolls provided with water and steam pipes in accordance with my plan. Fig. 2 represents a vertical cross-section of the same.

A represents the main frame of the apparatus; B, the calendering-rolls, arranged horizontally in the frame, as usual; C, pipes arranged to deliver cold water into a greater or less number of the calendering-rolls at one end; D, pipes which carry off the water from the opposite end of the rolls, and E a steam-pipe having any desired number of perforated arms or branches extending along the outside of the rolls and delivering the steam thereon. Water may be admitted to all or any desired number of the rolls, and the steam may, in like manner, be delivered to a greater or less number of the rolls, as circumstances may require. In most cases the best results are secured by supplying water to the top rolls only and delivering steam upon the bottom rolls only, as represented in the drawings.

The steam condenses upon the surface of the rolls, dampening them slightly, but with perfect uniformity, and the consequence is that the rolls impart to the surface of the paper a much smoother finish and higher polish than can be attained by the ordinary mode of procedure. When the steam and water pipes bear the relation shown in the drawings the condensation takes place gradually, but mainly upon the upper rolls, with which the steam comes in contact.

Having thus described my invention, what I claim is—

1. The method of calendering paper consisting in subjecting the same to the action of calendering-surfaces upon which a constant supply of steam is delivered.

2. In combination with a roll for calendering paper a pipe or conductor arranged to deliver steam upon the outer surface of the same.

3. The combination of the calendering-rolls supplied with running water by pipes communicating with the interior of the rolls and steam-pipes arranged to discharge upon the exterior of the rolls, as described and shown.

MOSES NEWTON.

Witnesses:
AMOS ANDREWS,
GEO. H. COLLINS.