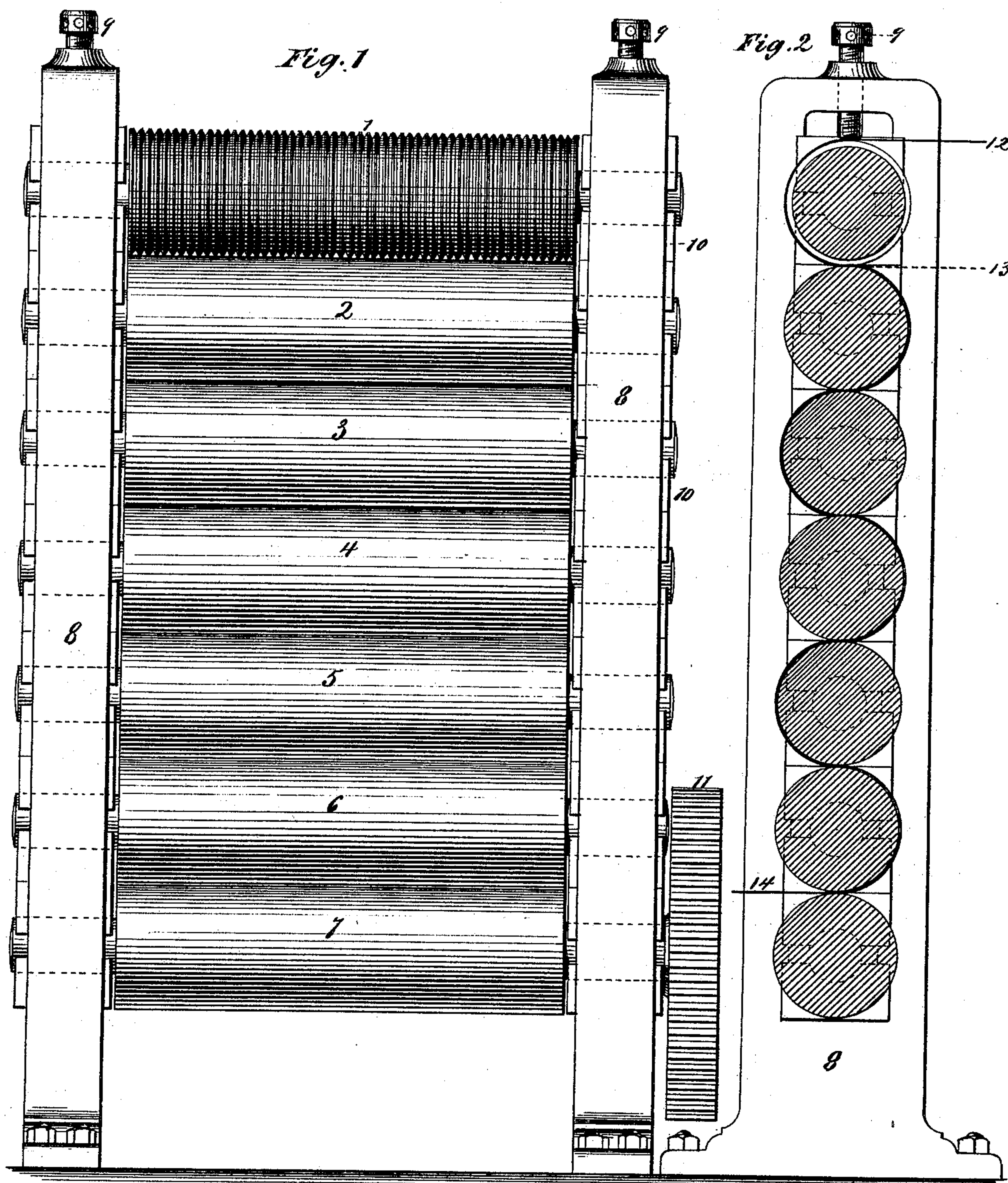


G. La MONTE & J. H. HALL.

PROCESS OF ORNAMENTING DRY PAPER.

No. 171,026.

Patented Dec. 14, 1875.



Witnesses:

W. Ryan  
S. Roberts

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Attys.



# UNITED STATES PATENT OFFICE.

GEORGE LA MONTE AND JOHN H. HALL, OF NEW YORK, N. Y.

## IMPROVEMENT IN PROCESSES OF ORNAMENTING DRY PAPER.

Specification forming part of Letters Patent No. **171,026**, dated December 14, 1875; application filed December 8, 1875.

*To all whom it may concern:*

Be it known that we, GEORGE LAMONTE and JOHN H. HALL, of the city, county, and State of New York, have invented an Improvement in Ornamenting Paper, of which the following is a specification:

The object of this invention is the production of an ornamented or figured writing-paper, such as is known to the trade as fancy paper, and which has a comparatively opaque body, in which the pattern or ornamentation appears in translucent lines. Such paper is commonly produced by the process known as water-marking, which consists in imparting the pattern or figure to the web of pulp before it has been pressed and calendered, by means of a dandy-roll, which from its nature, and the time of its application to the paper—that is, when the paper is in a semi-fluid or pulpy state—displaces the stock throughout the portions of it which come into contact with the pattern-roll, the result being a paper whose body is thinnest wherever its ornamental pattern appears. A figured paper has also been produced by what is known as the plating process, which consists in pressing the paper while dry between plates, one at least of which is ornamented with the figure desired to be imparted to the paper.

A process for ornamenting paper is described in the Patent No. 159,515, granted to us February 9, 1875, in which the paper taken just as it comes from the driers is dampened and passed between a figured and a plain calender-roll, by which means the ornamental pattern is impressed into the damp paper, after which it is dried. It is then passed through a number of plain calender-rolls sufficient to impart a high and equal finish to the general surface, which produces a paper in which the ornamental figures are translucent while the general body is opaque.

Our invention relates to an improvement upon these processes, but more particularly the last; and it consists in ornamenting paper by passing it while in a dry state between two or more rolls, one of which carries a pattern or figure.

An apparatus suitable to the practical carrying out of this process is shown in the annexed drawings, in which—

Figure 1 illustrates a stack of calenders, the upper one of which carries projections which form a pattern; and Fig. 2, a vertical section thereof.

The calenders composing this stack are numbered from 1 to 7, and are provided, as is usual, with journals which rest in loose boxes 10, supported in a suitable frame-work, 8. They are adjustable by means of screws 9, and have a rotary motion, derived from their frictional contact with each other and the lowermost roll 7, to which the power is applied through a gear-wheel, 11, connected with a suitable motor.

The paper is taken in a continuous length from the paper-machine after it has passed the driers, when, as is well understood by paper-makers, it will have a dead or unfinished appearance. Or the paper may be treated in sheet form; but, in consequence of the labor necessitated by feeding sheets, it is preferable to operate upon a web or long length.

Paper produced as above described is ordinarily finished by calendering its surface by submitting it to the pressure of calendering-rolls.

By our process it is first figured by passing it between a pair of rolls, one of which has a patterned surface, as at 1 in the drawing. It thus has the desired pattern or ornamental figure impressed in its body. The stock at the parts of it which have thus been brought into contact with the pattern is consolidated to a great degree, and the ornamentation thereby produced will not be obliterated by the finishing operation of calendering the general surface of the paper. This finishing is accomplished by passing the ornamented sheet or web of paper through two or more calender-rolls having plain surfaces, as illustrated in Fig. 2, where such rolls are marked 2 to 7, the paper being shown at 12 as entering a stack of calenders, and at 14 as emerging therefrom. The quality or degree of finish required for the general surface is governed by the num-

ber of times the paper is passed through the calenders and the amount of pressure applied to it.

By this process fancy paper is produced in an expeditious manner, at a cost scarcely exceeding that of ordinary calendered writing-paper.

What, therefore, we claim as new is—

The process of ornamenting paper by passing it while dry between a pair of metallic rolls, one of which is figured, and afterward finish-

ing its general surface between calender-rolls, substantially as shown and described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEO. LA MONTE.

JOHN H. HALL.

Witnesses:

HENRY S. DAVIS,

H. T. MUNSON.