(No Model.)

M. NEWTON.

Method of and Apparatus for Corrugating Paper.

No. 235,698. Patented Dec. 21, 1880.

Fig. 2.

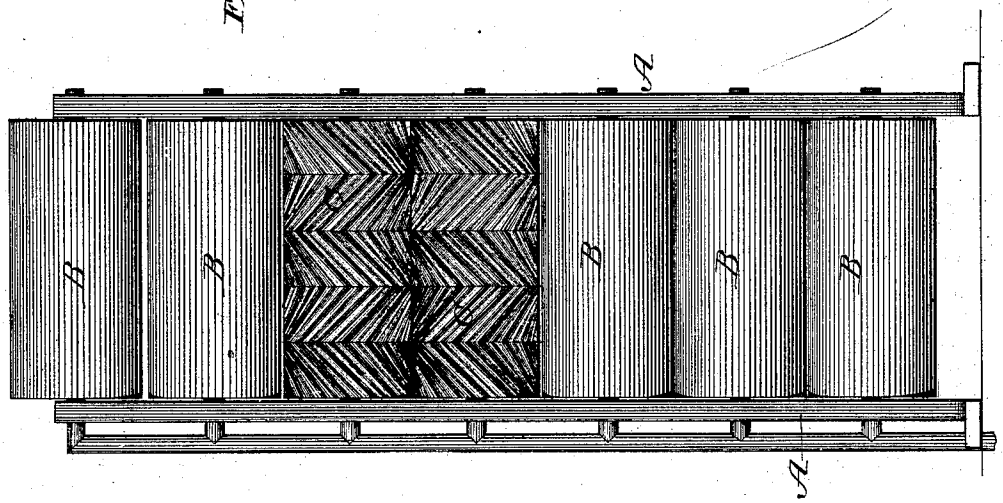
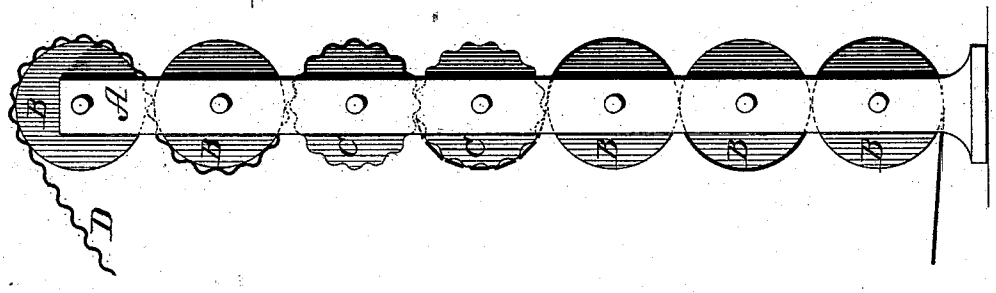


Fig. 1.



Attest.

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METHOD OF AND APPARATUS FOR CORRUGATING PAPER.

SPECIFICATION forming part of Letters Patent No. 235,698, dated December 21, 1880.

Application filed November 18, 1880. (No 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 Corrugating Paper, of which the following is a specification.

This invention relates to an improved method of and apparatus for corrugating or fluting paper or paper-felt to adapt it for use as a carpet-lining and for packing and other purposes, the method consisting in partially drying the paper, and while it is in that condition passing it between corrugated or fluted rolls, and the apparatus consisting simply of a drying roll or rolls and the corrugating-rolls.

In the accompanying drawings, Figure 1 represents a side elevation, and Fig. 2 a front or face view, of my improved apparatus.

Corrugated paper has hitherto been produced by passing the paper, sometimes in one condition and sometimes in another, between corrugated rolls; but as hitherto performed the operation has proven unsatisfactory, for the reason that if pressed between such rolls when too wet or before it had arrived at the proper degree of tenacity and firmness the paper was liable to be torn and its fibers to be separated and disarranged, and the paper, when finished, has consequently, to a greater or less extent, lost the form imparted to it, and has lacked strength and elasticity; or if pressed when hard or stiff the fiber has been disturbed and the surface broken. These difficulties are especially noticeable when it is attempted to impart to the paper irregular corrugations, as in the paper for which I have recently made application for patent, and for which more particularly this invention is intended. These difficulties cannot be overcome by acting upon the pulp before it is converted into paper or paper-felt, nor by dampening a sheet of finished paper and subjecting it to the action of the fluted or corrugated rolls or surfaces. I have, however, discovered that by treating the paper or subjecting it to the action of the rolls as it comes, partially dried, from the drying roll or rolls of the paper-machine the corrugations may be most perfectly and advantageously formed. To carry out this plan I introduce into the series of drying-rolls or place in position to receive the paper coming therefrom a pair of corrugating-rolls. The drying-rolls may be arranged in a vertical series, as shown, or they may be in a horizontal series with the corrugating-rolls mounted in the series or above, at any suitable point.

In the drawings, A represents the framing or standards, in which are mounted a series of horizontal drying-rolls, B, and at any desired point in the series a pair of corrugated rolls, C. The paper D, after passing through or between a part of the drying-rolls of the series, and being thereby partially dried, is passed between the corrugating-rolls, and thereby corrugated, and finally passes over and between the remaining drying-rolls, whereby the drying is completed.

Motion will be imparted to the rolls in any usual or convenient manner, and the corrugating-rolls will be geared together to cause them to move in unison, in order that the fiber of the paper may not be separated or broken.

Ordinary means for supporting the paper in its passage through the series of rolls will be provided when necessary, and the drying-rolls will be heated in the usual way.

The paper may be passed to the corrugating-rolls at any proper stage of the drying process.

Having thus described my invention, what I claim is—

1. The herein-described method of corrugating paper, consisting in passing the paper as it comes, partially dried, from the drying-rolls of a paper-machine between corrugated rolls.

2. The herein-described apparatus for producing corrugated paper, consisting of one or more drying-rolls and a pair of corrugating-rolls arranged to receive and act upon the paper as it comes from the drying roll or rolls, as set forth.

3. The herein-described method of manufacturing corrugated papers, consisting in forming the stock or pulp into a sheet, partially drying said sheet, and then subjecting the same while in the partially-dried condition to the action of corrugating devices, and finally completing the drying operation.

4. In combination with a series of paper-drying rolls, corrugating-rolls located at an intermediate point in the series.

MOSES NEWTON.

Witnesses:

FREDERICK HUBBARD,

ELLA CHILDS.