

No. 623,695.

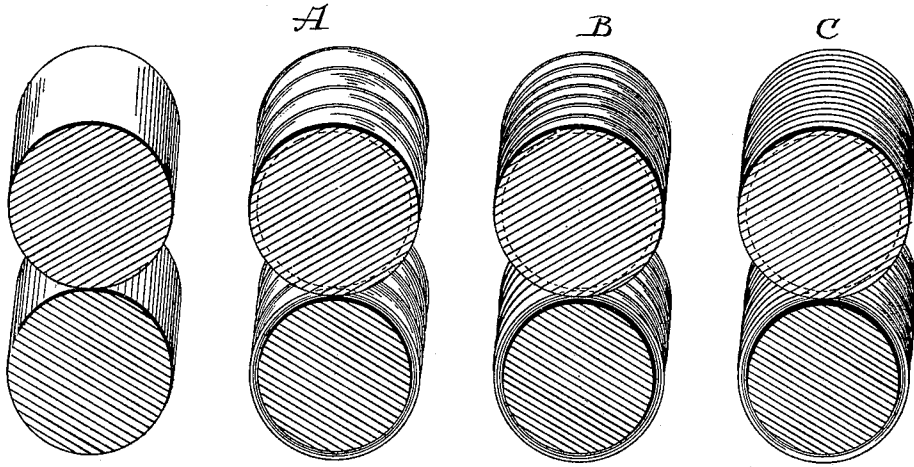
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METHOD OF MANUFACTURING CORRUGATED PAPER.

(Application filed Feb. 21, 1898.)

(No Model.)



WITNESSES
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METHOD OF MANUFACTURING CORRUGATED PAPER.

SPECIFICATION forming part of Letters Patent No. 623,695, dated April 25, 1899.

Application filed February 21, 1898. Serial No. 671,209. (No specimens.)

To all whom it may concern:

Be it known that I, JAMES ARKELL, a resident of Canajoharie, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Methods of Manufacturing Corrugated Paper; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in the method of manufacturing corrugated paper, the object of the invention being to produce an elastic paper for the purpose of making elastic bags or other articles and to manufacture said elastic paper in such manner as to avoid injurious distention or partial rupture of the fiber and retain the original strength of the paper.

With this object in view the invention consists in certain novel steps in the method of making corrugated paper, as hereinafter set forth, and pointed out in the claims.

The accompanying drawing is a view illustrating a series of corrugated rollers by means of which my improvements can be carried into effect.

Ordinarily paper has been heretofore corrugated in a comparatively dry condition, for the reason that damp or wet paper in the process of corrugating has a tendency to destructive creases or to an injurious strain of the fiber by the stretching during the process. As all paper is in the abstract a woody fiber, the nearer it approximates to a dry condition the greater will be the liability of fracture. This is evidenced in the necessity for soaking or steaming wood for curved forms, whereby the fiber becomes pliant and loses its liability to sliver. My purpose is to avoid the injurious distention and partial rupture of the fiber by delivering the paper to the ultimate corrugating-rollers in the form of loose waves that narrow the ply and which, entering the loose rolls, are simply distended to uninjurious corrugations by the absorption of the surplus of the coarser indented waves and so taking up the presented surplusage in place of disturbing the fiber by distention. For this reason and according to the thickness of the sheet

subjected to the pressure I first run the paper through water at its natural temperature or tepid or hot water, as required, to saturate varying thicknesses of paper, the superabundance of the liquid being pressed out of the stock in any suitable manner, and then deliver the thoroughly-moistened ply to coarse corrugated rollers, varying in number and variation of corrugation according to the requirements of the material under treatment.

I have not shown in the drawing, nor do I deem it necessary to show the gearing for rotating the corrugated rollers, nor the saturating-vats, nor the subsequent drying devices, as these may be of the usual construction.

The pair of rollers A are made with coarse corrugations, the rollers B with finer corrugations, and the rollers C with still finer corrugations. With some thicknesses of material two pairs of rollers, one coarse and the other fine, may suffice and with other materials several pairs of rollers, each pair having its corrugations smaller than the preceding pair. The number of pairs of rollers and the sizes of the corrugations therein are not matters of great importance; but the corrugations of the first pair of rollers between which the stock is passed must be coarser than the corrugations of the last or finishing pair of rollers, so that as the paper passes through the finely-corrugated rollers the coarse corrugations or waves formed by the coarsely-corrugated rollers will be distended to uninjured fine corrugations by the absorption of said coarse corrugations or waves.

A corrugated paper thus manufactured will be very elastic and strong (its fibers not having been injured) and is particularly useful for making elastic paper bags for containing flour or other material.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described method consisting in first corrugating paper to form coarse waves and then distending said waves by the absorption thereof to form finer corrugations, substantially as set forth.

2. The herein-described method consisting in moistening paper; corrugating the moist paper to form coarse waves and then distend-

ing said waves by the absorption thereof to form finer corrugations.

3. The herein-described method consisting in first saturating paper with water, then
5 pressing surplus moisture from the paper; then corrugating the paper to form coarse waves and then distending said waves by the absorption thereof to form finer corrugations.

In testimony whereof I have signed this specification in the presence of two subscribers and two witnesses.

JAMES ARKELL.

Witnesses:

GRACE H. QUATFE,
WILLIAM J. ARKELL.