(No Model.)

R. W. BAINBRIDGE.

CRAPE PAPER MACHINE.

No. 548,108. Patented Oct. 15, 1895.

Fig. 1,

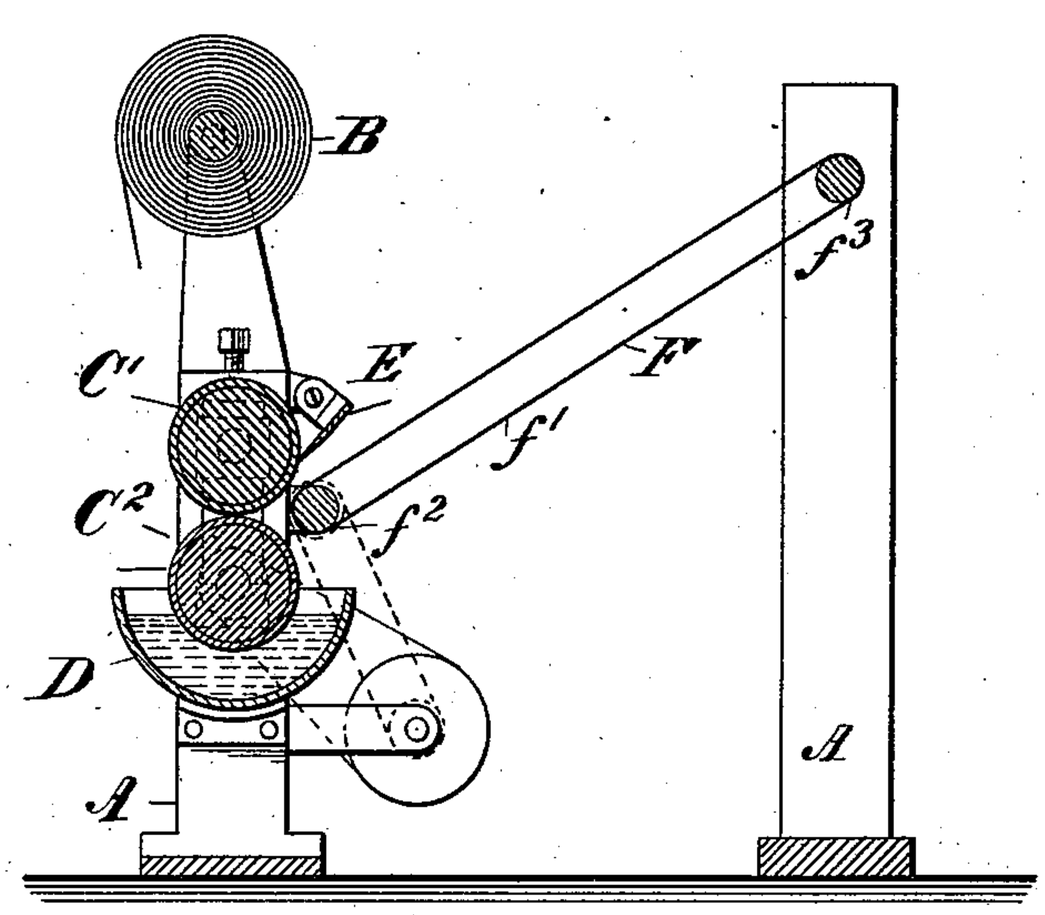
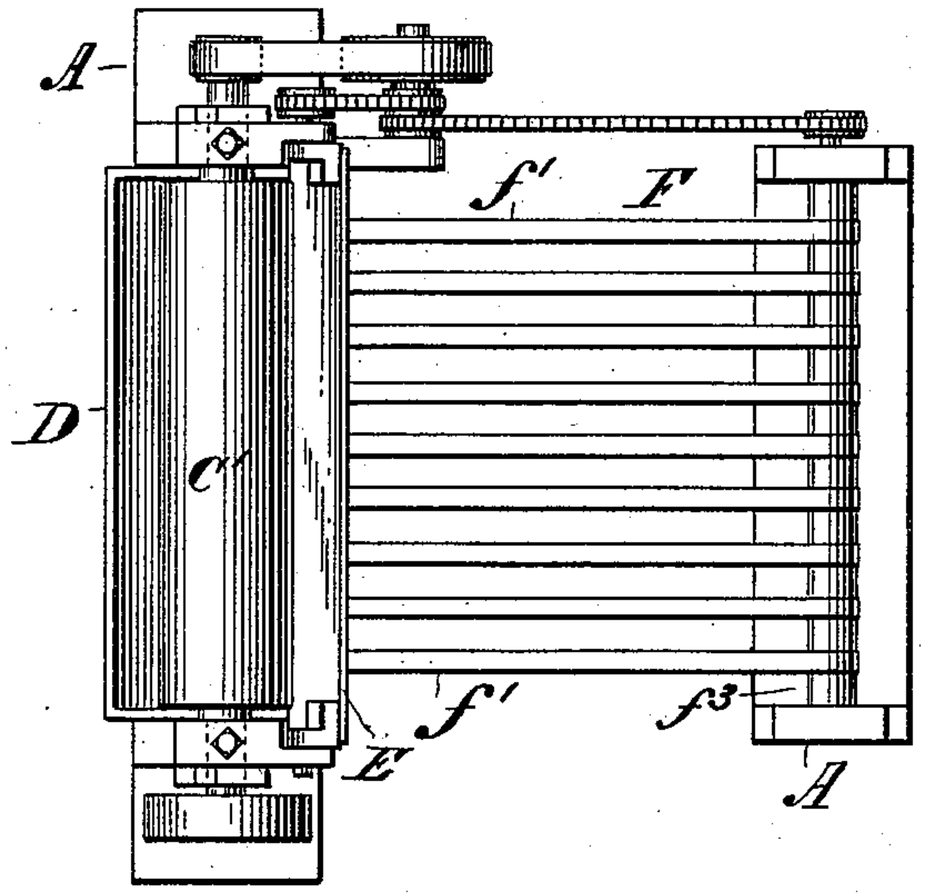


Fig. 2,



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UNITED STATES PATENT OFFICE.

RICHARD W. BAINBRIDGE, OF BROOKLYN, NEW YORK.

CRAPE-PAPER MACHINE.

SPECIFICATION forming part of Letters Patent No. 548,108, dated October 15, 1895.

Application filed September 6, 1893. Serial No. 484,924. (No model.)

To all whom it may concern:

Be it known that I, RICHARD W. BAINBRIDGE, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Crape-Paper Machines, of which the following is a specification.

My invention relates to machines for treating paper so as to produce what is termed "crape-paper," or, in other words, a paper having a wrinkled appearance to resemble crape; and the object of my invention is to provide a simple, cheap, and effective means whereby the thinnest kinds of paper, such as tissue-paper, may be successfully treated. As is well known, this paper is exceedingly fragile, and especially so when dampened or wet, so that it is readily torn or disrupted when subjected to any strain, and, furthermore, when treated to produce the effects described it is essential that it be handled so that no strain shall be put upon it until it has become dried. Heretofore machines have been proposed in which certain crape effects in paper could be produced; but in all of these, so far as I am aware, there is practically no elasticity to the paper after it is produced, and while its surface may have a more or less roughened or crape effect it cannot be stretched or pulled out to any extent, and the crape effect is very inferior. By my improvement not only is this crape effect more successfully produced on thin tissue and other similar papers, but this effect is retained in the paper when finished, and it is capable of being pulled out to a considerable extent, retaining the crape effect.

To these ends my invention consists in an apparatus embodying the features of construction and arrangement substantially as hereinafter more particularly pointed out.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of a machine embodying my invention, and Fig. 2 is a plan view of the same with certain parts omitted.

The frame A may be of any suitable and desired construction to support the operative mechanism. Mounted in the frame is a roll of paper B, which roll turns in bearings in the frame A. Also mounted in the frame is a cylinder C′, journaled to turn therein, and this cylinder is made of metal or metal faced with hard rubber or analogous material, and has a smooth surface, to which the moistened paper hereinafter described will cling in a well-known manner. Arranged beneath the cylinder C′ is a roller C^2, also journaled in the frame A, or otherwise suitably mounted, and this roller is preferably covered with cloth or other analogous absorbent substance for taking up the liquid and properly applying it to the paper, as hereinafter set forth. Located beneath this roller is a trough or tank D containing a liquid, in which the roller C^2 revolves, and this liquid may be water, or it may be a solution of coloring-matter, according to the nature of the paper being treated. The purpose of the liquid is, primarily, to dampen the paper being treated; but if the paper is to be colored or treated in any desired manner the liquid contains a coloring or other material in solution, and it is applied to the paper in the dampening operation.

Arranged adjacent to and in contact with the delivery side of the cylinder C′ is a doctor or detacher E, the operative edge or face of which projects downward, and this face is preferably on a line substantially corresponding with the horizontal diameter of the roller, while the body part of the doctor projects at an angle to a vertical plane corresponding with the delivery side of the cylinder. Arranged directly beneath and in close proximity to the operative edge of the doctor is a roll f^2, around which pass endless belts or delivery devices f', which extend to and pass around the rolls f^3, and these delivery-belts are arranged to be driven in any suitable way, as by the driving-pulley and belts connected to the shaft of the roller C^2, as indicated in the drawings, or in any other equivalent manner.

Such being substantially the construction and arrangement of the machine shown in the drawings, its operation in producing crape-paper will be readily understood, and it will be seen that the paper is lead from the roll B, from one side or the other thereof, down to and passes around the cylinder C′ and between said cylinder and the roller C^2. The roller C^2 is so adjusted with relation to the cylinder C′ as to press thereon with proper pressure to apply the liquid taken from the tank D by said roller to the paper on the cylinder C′, so that the paper is thoroughly sat-

urated with said liquid, and when the liquid contains a coloring-matter or other material in solution this is also forced into the fibers of the paper and thoroughly saturates the sheet throughout. This moistened paper, as is well known, clings or adheres to the face of the cylinder C′ until it meets the operative edge of the doctor or detacher E, against which it impinges, and by means of which it is stripped from the face of the cylinder and assumes a crinkled or craped condition, and it falls directly upon the traveling receiver and conveyer F, and is carried away to the drier. By my arrangement, whereby I place the traveling receiver and conveyer directly beneath the operative edge of the doctor and in relatively-close proximity thereto, it will be seen that the crinkled or crape paper, as it leaves the edge of the doctor, falls directly on the traveling receiver and conveyer without disturbing or pulling out the crinkles formed therein, and I am enabled to produce a crinkled or craped paper having a most satisfactory crape appearance, and which is capable of being stretched or pulled out to many times its length. Further, it will be seen that after the paper is moistened or moistened and colored or treated and crinkled by the doctor or detacher there is no strain upon the paper which would have a tendency to destroy the crinkled effect in any degree.

While I have thus shown the preferred arrangement of my invention, it will be apparent that the essential features of construction reside in the fact that the operative edge of the doctor or detacher projects downward, and the traveling receiver and conveyer is arranged directly beneath the operative edge, so that the crinkled paper falls immediately thereon without being stretched or the wrinkles disturbed in any manner, and it is evident that these essential features may be applied to machines embodying other details of construction without departing from the spirit of my invention.

What I claim is—

1. The combination with a cylinder to support the moistened paper, of a doctor or detacher to remove it therefrom arranged with its operative edge downward, and a traveling receiver and conveyer located directly beneath the operative edge of the doctor or detacher and upon which the paper falls immediately after its removal from the cylinder by the doctor, substantially as described.

2. The combination with a cylinder to support the paper, of a tank containing liquid, a roller mounted in the tank and bearing against the cylinder to receive the liquid from the tank and deliver it to the paper on the cylinder, a doctor or detacher to remove the paper from the cylinder arranged with its operative edge or face downward, and a traveling receiver and conveyer located directly beneath the operative edge of the doctor and upon which the paper falls immediately after its removal from the cylinder by the doctor, substantially as described.

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

RICHD. W. BAINBRIDGE.

Witnesses:
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