T. M. MORTON.

MACHINE FOR DAMPING PAPER.

No. 194,613. Patented Aug. 28, 1877.

Fig. 1.

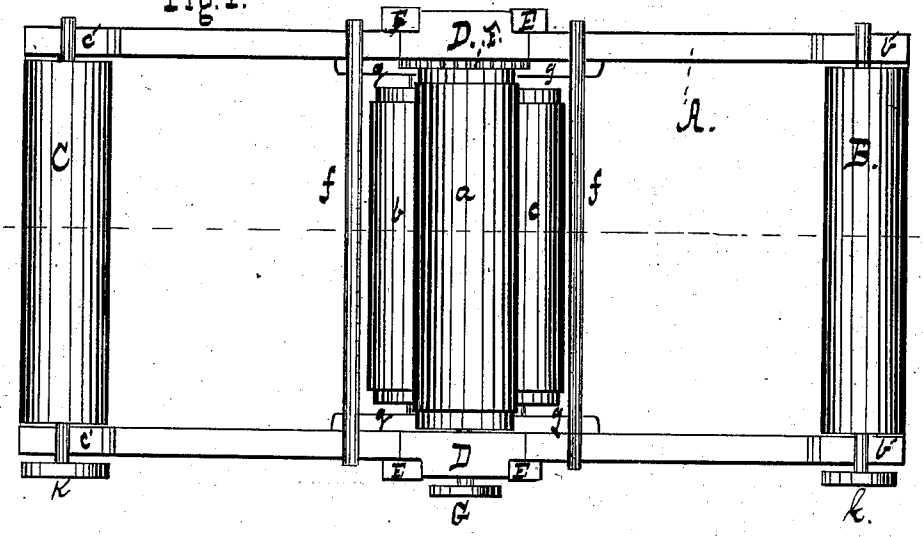
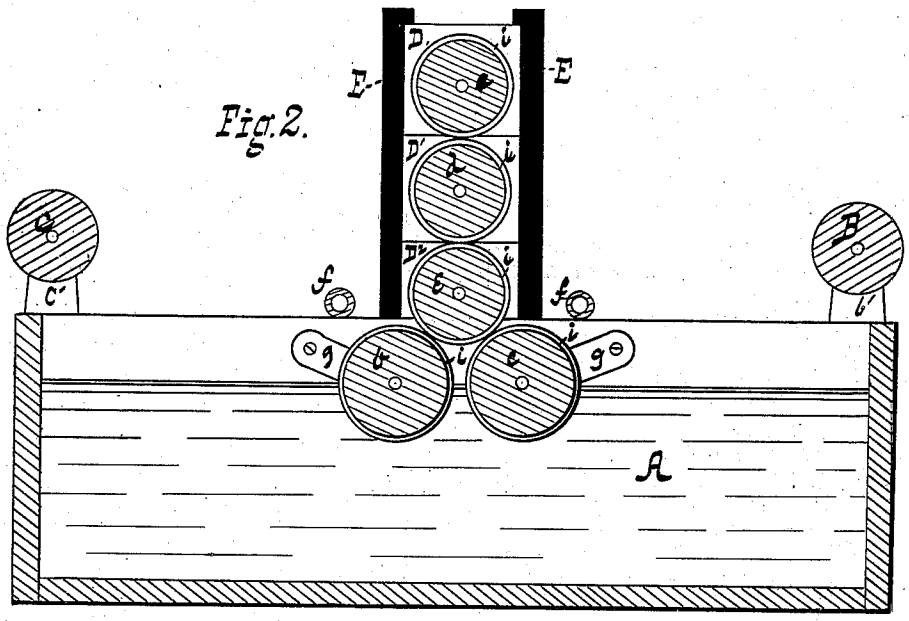


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS M. MORTON, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN MACHINES FOR DAMPING PAPER.

Specification forming part of Letters Patent No. **194,613**, dated August 28, 1877; application filed July 31, 1877.

To all whom it may concern:

Be it known that I, THOMAS M. MORTON, of the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Machines for Moistening Paper; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view, and Fig. 2 a vertical longitudinal sectional view, of my machine.

This invention relates to that class of devices in use for moistening paper preparatory to its being printed upon; and it consists in certain details of construction and combinations of parts as hereinafter fully set forth and claimed.

In the drawings, A represents a tank, to the walls of which are firmly secured, at either end, supports b' c', which carry the rolls B C. About midway of the sides of the tank are similarly attached, at either side, the guides E E, in which slide or are secured the bearings D D^1 D^2 of the rollers *a d e*. The bearings D D^1 are firmly secured within the guides, while those of the roller *e* freely slide therein, admitting of the adjustment of the roller. This adjustment is effected by means of a screw, or in any other suitable and convenient manner.

The rollers *b* and *c* within the tank are mounted upon swinging arms *g g*, whereby the distance of these rollers from the roller *e* may be regulated or changed. Spray-pipes *f f* are mounted upon the tank at either side of the rollers, and are provided with a line of holes for the exit of water. These pipes are capable of revolution, so that the jets of water may be made to play upon any desired one of the rollers. A pulley, G, is secured to the shaft of the middle roller *d*, over which pulley a belt passes for communicating motion to the mechanism. Similar pulleys *k k* are attached for a like purpose to the shafts of the rollers B and C.

The surfaces of the rollers *a*, *b*, *c*, *d*, and *e* are covered with felting *i*, in order to effect an even distribution of the water.

F represents a gear-wheel secured to the shaft of the roller *a*, which meshes with a similar wheel upon the shaft of the middle roller, the latter wheel gearing also with a similar one upon the shaft of the lower roller *e*. The wheels being of the same size, the motions of all the shafts are equal. The lower rollers *b c* are not power driven, but revolve merely by contact with the roller *e*.

The operation of the device is as follows: A roll of paper is mounted upon the shaft at one end of the machine, and the felting *i*, being saturated with water, the end of the web of paper is led between the rollers *a* and *d*, and thence over the opposite end of the tank directly to the press.

The spray-pipes *f f* may be used or not. When not in use the tank A is filled with water to a sufficient depth to partially immerse the rollers *b c*—their felting parts with a sufficient quantity of water to keep the felting upon the upper rollers properly moist. When the pipes *f* are used the water in the tank may be dispensed with.

With machines of this class in general use, in which the water is sprinkled directly upon the paper, it is necessary to allow the paper roll to stand for a considerable time in order that the water shall uniformly permeate to all parts of the paper. With my device this delay is unnecessary. The paper is uniformly wetted as it comes from the machine, and, as above stated, may be led directly to the perfecting-press. When its bearings are properly lubricated it will not be found necessary to drive the feed-roll; but should it become necessary, means must, of course, be adopted to increase its speed as the roll of paper unwinds. In case it should be desired to wind the wet paper upon the opposite or receiving-roll instead of directly conducting it to the press, similar means must, of course, be employed to keep the surface-speed of the gradually-increasing cylinder equal to that of the moistening and feed rollers.

While I have described the rollers as covered with felt, I do not limit myself thereto, as textile fabric or other absorbent of moisture will answer.

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

1. In a machine for moistening paper, a se-

ries of two or more felted rollers and an adjustable spray-pipe, substantially as described.

2. In a machine for moistening paper, an adjustable spray-pipe and a series of two or more felted rollers, one of which rollers is mounted in adjustable bearings, substantially as described.

3. In combination with the tank A, the rollers *a*, *b*, *c*, *d*, and *e*, and spray-pipe *f*, substantially as described.

4. In combination with the rollers *a*, *d*, and *e*, the adjustable spray-pipe *f*, substantially as described.

5. In combination with the felted moistening-rollers *a d e*, the feed and receiving rollers B C, and adjustable spray-pipe *f*, substantially as described.

THOMAS M. MORTON.

Witnesses:
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