

(No Model.)

W. N. CORNELL.  
DAMPING APPARATUS.

No. 455,741.

Patented July 14, 1891.

Fig. 1.

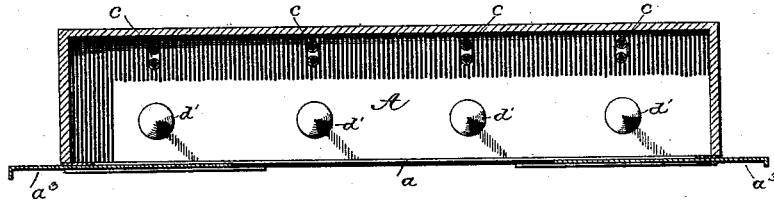


Fig. 2.

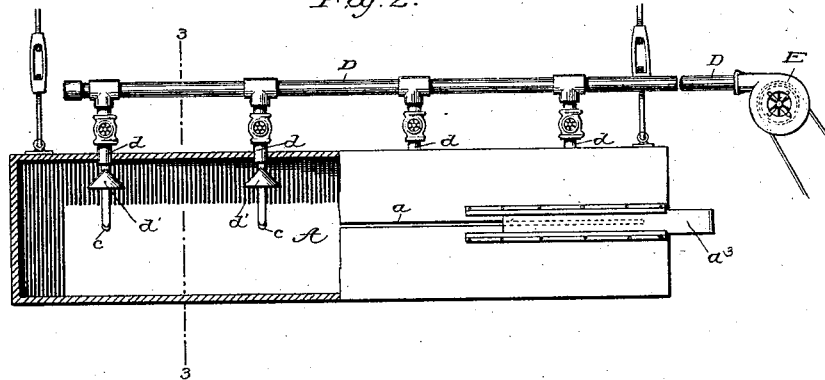
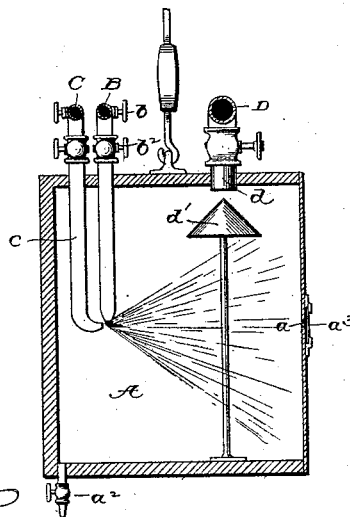


Fig. 3.  
on line 3-3



Witnesses:

*W. N. Cornell*

*J. Stanley Elmors*

Inventor:

*W. N. Cornell*

*By Phil. T. Dodge*  
*att'y*

# UNITED STATES PATENT OFFICE.

WILLIAM N. CORNELL, OF BROWNVILLE, NEW YORK.

## DAMPING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 455,741, dated July 14, 1891.

Application filed October 9, 1890. Serial No. 387,511. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM N. CORNELL, of Brownville, in the county of Jefferson and State of New York, have invented certain Improvements in Damping Apparatus, of which the following is a specification.

This invention relates to an apparatus by which sheets of paper or other fabrics may be uniformly damped and the amount of moisture controlled at will.

In the accompanying drawings, Figure 1 represents a horizontal section through my apparatus. Fig. 2 is a front view of the damping-box, showing the slit or opening through which the vapor is delivered. Fig. 3 is a vertical cross-section on the line 3 3 of the preceding figures.

Referring to the drawings, A represents an elongated chest or box, provided in its forward side with a narrow slit or opening  $a$ , through which the moist vapor is delivered to act upon the paper or other fabric. This chest may be arranged in any position adapted to secure the delivery of the vapor at the required point.

B represents a water-supply pipe, provided with a suitable controlling-valve  $b$  and with a series of branch pipes, which enter the chest A at different points in its length. Each of these branch pipes may also be provided with a controlling-valve  $b^2$ .

C represents a steam-supply pipe, having a series of branches  $c$ , which enter the chest A and have their ends returned in such manner that the jets of steam are delivered therefrom in opposition to the water-jets, the effect of which is to finally atomize the water and reduce the same to a form of fine spray or mist.

D represents an air-supply pipe connected with a rotary blower E or any other approved form of blowing apparatus, and provided with a series of branch pipes  $d$ , which enter the trunk or chamber A, the air being delivered from them against cones or deflectors  $d'$ , by which it is distributed uniformly to the trunk.

The air thus driven into the trunk becomes saturated with the mist or vapor therein and issues under considerable pressure and at

high velocity in a thin sheet or film through the slit at the front of the trunk. This film of moisture-laden air, projecting from the slit, will act upon and effectually and uniformly damp the fabric, which will be carried steadily past the slit. As a certain amount of moisture will be deposited within the trunk, the chamber should be provided with a drainage-cock  $a^2$  at one end. In order that the length of the slit may be varied at will, according to the width of the fabric to be treated, I provide sliding plates  $a^3$  on the front of the trunk to cover the ends of the slit to a greater or less extent, as occasion may require.

The essence of the invention lies in atomizing the water within the trunk and combining the same therein with air under pressure, and it is to be understood that the air-forcing mechanism and the atomizing device, may be of any suitable construction.

Having thus described my invention, what I claim is—

1. In a mechanism for damping paper, the combination of a trunk or chamber with a delivery-opening, a pipe through which air is delivered into said trunk, a pipe through which water is delivered into the trunk, and a pipe through which steam is delivered to atomize the water.

2. In a paper-damping mechanism, the combination of the trunk or chamber having the delivery-slit in its side, the air-delivery pipe, the water-pipe with its delivery branches, and the steam-pipe having the branches arranged to direct the steam against the water-jets.

3. In a damping mechanism, the trunk or chamber, the water-supply pipe, and an atomizer, in combination with an air-delivery pipe and deflectors to distribute the air within the trunk.

In testimony whereof I hereunto set my hand, this 5th day of August, 1890, in the presence of two attesting witnesses.

WILLIAM N. CORNELL.

Witnesses:

J. T. RAPLEE,  
J. S. BOYER.