

(No Model.)

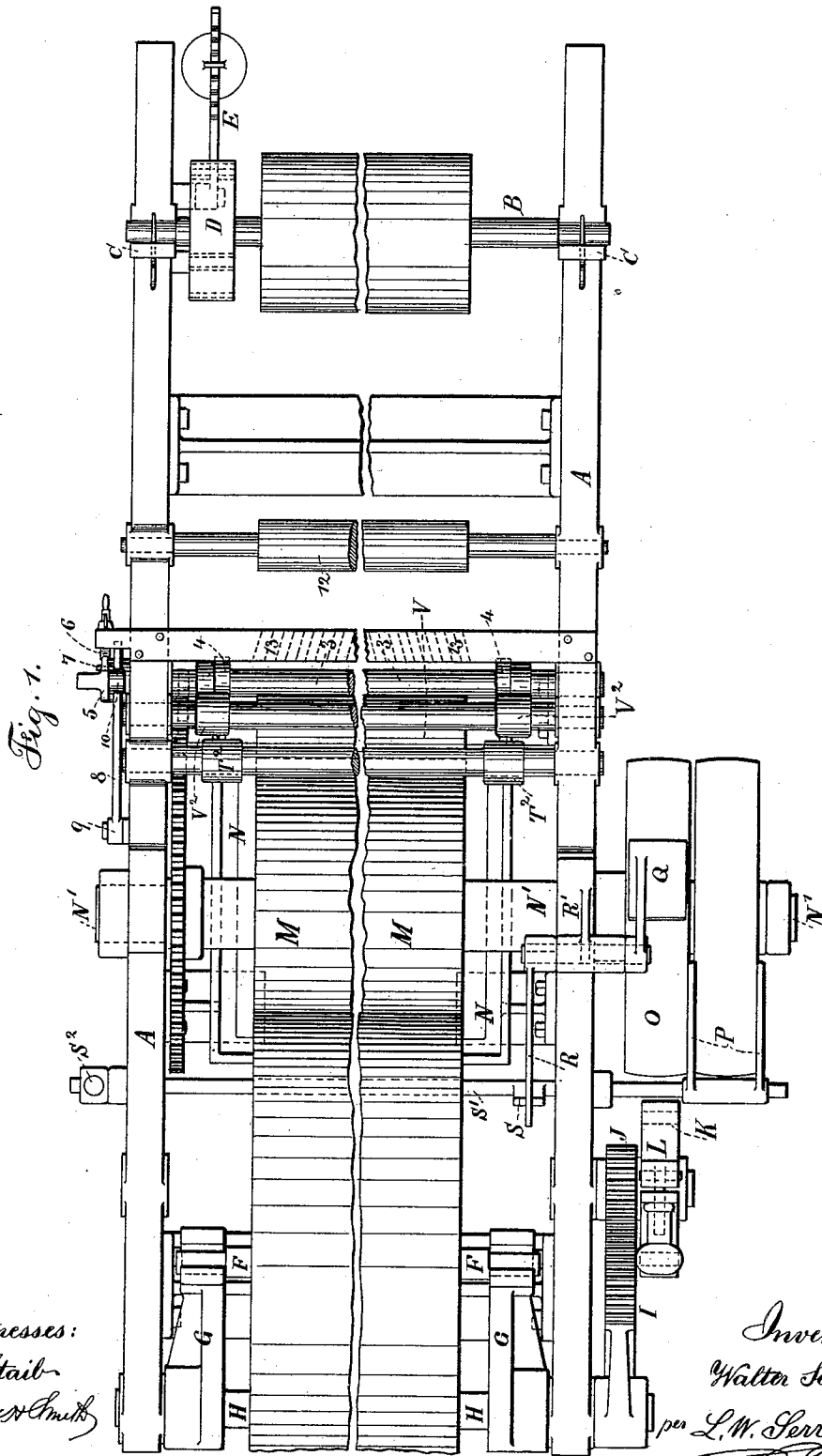
3 Sheets—Sheet 1.

W. SCOTT.

DAMPENING APPARATUS FOR ROLLS OF PAPER.

No. 404,505.

Patented June 4, 1889.



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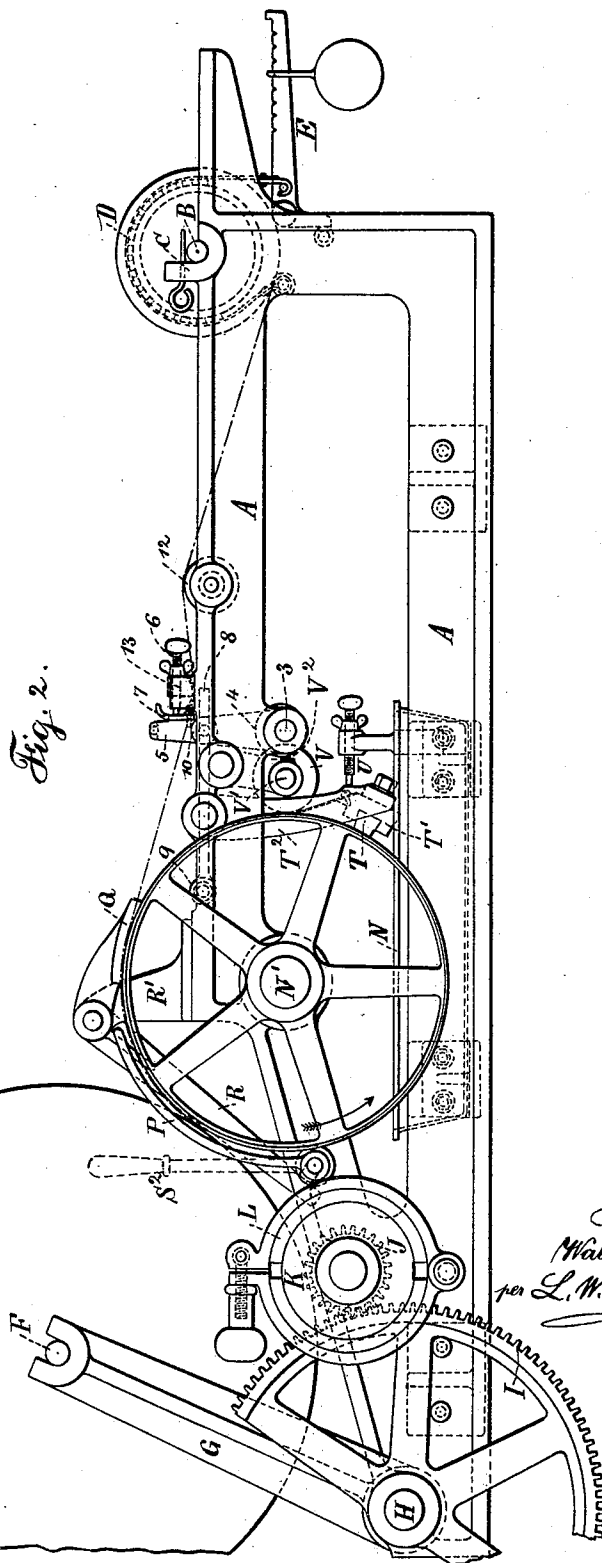
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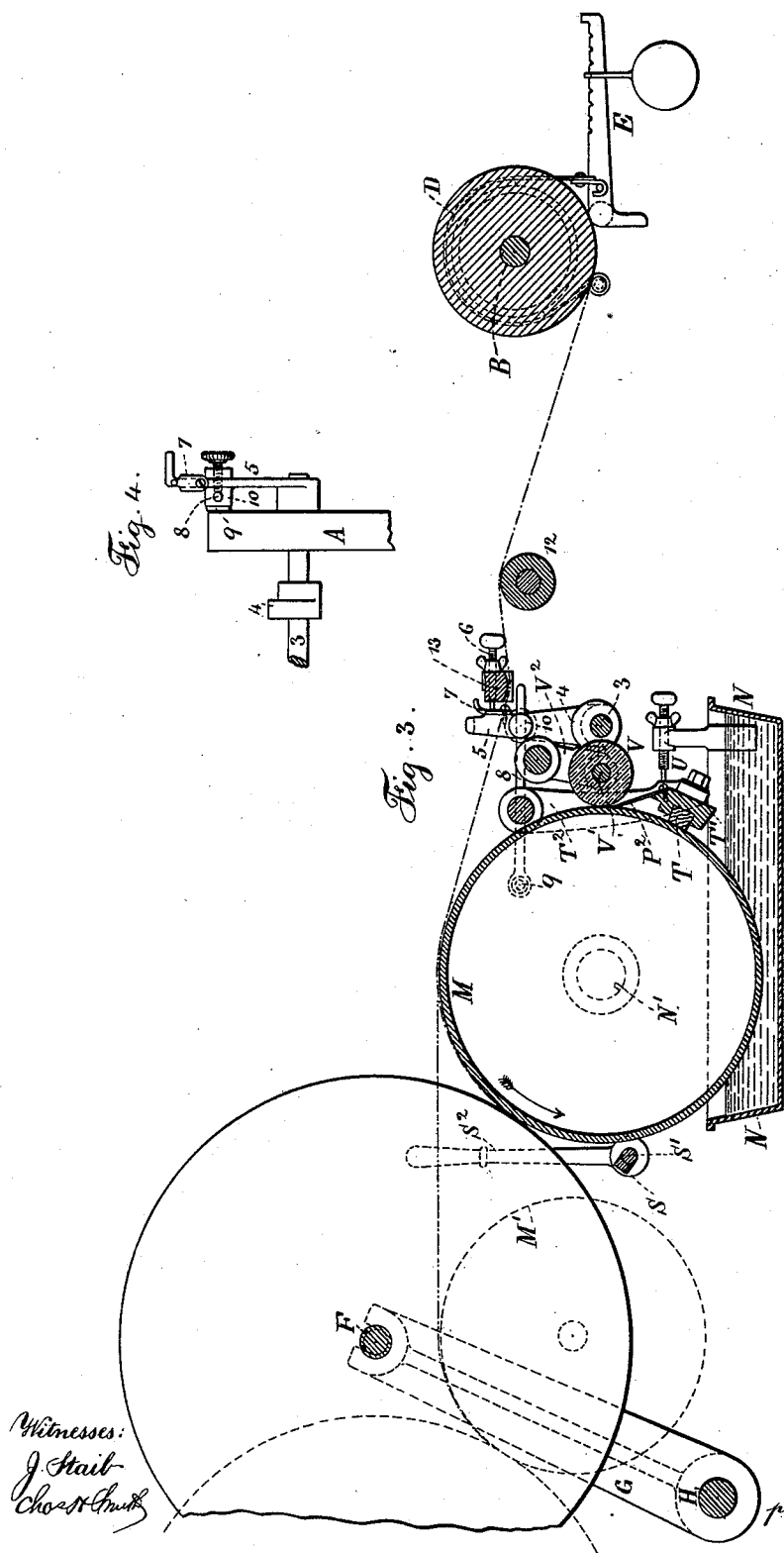
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DAMPENING APPARATUS FOR ROLLS OF PAPER.

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N. PETERS. Photo-Lithographer, Washington

UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY.

DAMPENING APPARATUS FOR ROLLS OF PAPER.

SPECIFICATION forming part of Letters Patent No. 404,505, dated June 4, 1889.

Application filed October 15, 1888. Serial No. 288,071. (No model.)

To all whom it may concern:

Be it known that I, WALTER SCOTT, of Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Dampening Apparatus for Rolls of Paper, of which the following is a specification.

In this apparatus the web of paper is drawn off the roll and dampened by direct contact with the dampening-cylinder, and then it is wound upon another roll as the dampening progresses.

My present improvements relate to devices for regulating the quantity of water supplied to the paper by the cylinder with which it comes in contact.

In the drawings, Figure 1 is a plan view of the apparatus. Fig. 2 is an elevation of the same; and Fig. 3 is a longitudinal section, and Fig. 4 is a detached view, of the lever-handle and swinging-block, that is used in connection with the pressure applied to the elastic roll that regulates the quantity of water remaining upon the surface of the wetting-cylinder.

The main frames A are adapted to the reception of the shafts and other parts of the mechanism, hereinafter described.

B is the shaft or axis of the roll of paper, the ends of which axis are received into jaws C upon the frame A, and a friction-strap D and weighted lever E are applied to a pulley upon the axis B to prevent the roll of paper unwinding too rapidly.

F is the axis or roll upon which the paper is wound, and the same is received into jaws at the ends of the levers G, which extend from the cross-shaft H, and upon this cross-shaft is a toothed sector I, acted upon by a pinion, and shaft J, and the wheel K, and friction-clamp L. These parts correspond to those shown in Letters Patent No. 272,588, granted to me February 20, 1883, and it is to be understood that the friction-clamp L serves to keep the roll of paper toward the wetting and winding cylinder M, but it allows the levers G and cross-shaft H to move as the roll of paper increases in diameter, and the pinion and sector I are used for swinging the shaft H and levers G until the roll of paper is brought down to the floor or platform to be rolled away from the machine.

The wetting-cylinder M is above the trough N, that contains the water or liquid em-

ployed in wetting the paper, and the lower part of the cylinder M is in the water of said trough. I prefer to apply the power to the shaft N' by the pulley O and belt, so as to revolve the wetting cylinder M, and also rotate the roll of paper that is wound upon the axis or roll F. It is usual to provide fast and loose pulleys upon the shaft N', and a belt-shifter P, and also a brake Q, for stopping the rotation of the fast pulley and of the wetting-cylinder M. This brake Q is upon the lever-arm R, that is pivoted to the frame R', and there is a cam S upon a cross-shaft S', having a lever-handle S², by which the shaft can be partially rotated to cause the cam to act upon the lower end of the brake-lever R and the brake Q to stop the rotation of the wetting and winding apparatus.

The wetting-cylinder M is rotated in the direction indicated by the arrow, and at the ascending side of the cylinder I prefer to apply the cross-bar T, preferably of wood, which forms a scraper to remove surplus moisture from the surface of the wetting-cylinder M. This cross-bar T is set into a metal holder T', hung at its end by the arms T² from the frame A, and there are set-screws U for pressing the cross-bar or scraper more or less closely into contact with the surface of the cylinder M.

Above the scraper T is a roller or cylinder V, preferably of india-rubber, upon the shaft V', and this is preferably hung by the arms or links V² at the ends thereof, the upper ends of the links being pivoted upon the frame A, and there is a cross-shaft 3, having eccentrics or cams 4, that act against the links V² to swing such links and press the roller V more or less firmly against the wetting-cylinder M. The shaft 3 is provided at one end with the lever-handle 5, by which the shaft and cams can be turned to adjust the pressure of the roller V against the cylinder M, and I provide a set-screw 6 for holding the lever-handle 5 and for accurately adjusting the pressure, such set-screw acting against one side of the lever-handle 5; but I prefer to use and have represented a swinging block 7, pivoted to the lever 5 at one side and against which the end of the set-screw 6 acts. By swinging this block 7 aside the lever-handle 5 can be moved toward the screw 6 sufficiently to lessen the pressure of the rubber roll V against the wet-

ting-cylinder M, and thereby prevent the roller V becoming flattened at the point of contact when the dampening apparatus is not in use. I also provide a clamp-bar 8, pivoted to the frame at 9 and passing through the clamp 10 upon the lever-handle 5, so that this lever-handle can be held thereby temporarily while adjusting the pressure of the rubber roll V upon the wetting-cylinder M; but any suitable means may be used for adjusting the pressure of the roll V upon the cylinder M. It is to be understood that the adjustments have to be made with accuracy, in order that the quantity of moisture passing to the web of paper may be determined with reliability, because the moisture is taken up by the paper while in contact with the cylinder M as it passes over the surface thereof and is wound upon the axis or roll F. As the paper passes from the roll B to the dampening-roll M it is guided by the roll 12, over which it passes, and by the stationary bar 13, that is above the web of paper, and the under surface of this bar 13 is rounded and provided with diverging grooves, so that such bar acts as a spreader to open out and flatten any wrinkles or folds in the web of paper. Usually the roll of paper that is to be wound up will be in contact with the dampening-cylinder M; but, if desired, this dampening-cylinder M may be at a distance from the winding-up roll F sufficiently for the introduction of another cylinder M', as shown in dotted lines, Fig. 3, to which the power is to be applied, the parts of the dampening apparatus remaining unchanged.

In order to prevent the water that is kept back by the rubber roller V passing down the surface of the dampening-cylinder M and lodging against the cross-bar or scraper T, I prefer to introduce a deflecting-plate P², that is fastened at its lower edge upon the holder T', and its upper edge rests against the surface of the dampening-cylinder M below the point of contact therewith of the rubber roller V.

I claim as my invention—

1. The combination, with the dampening-cylinder M and water-trough N, of the cross-bar or scraper T, holder T', and pivoted arms for supporting the holder, and means for regulating the proximity of the cross-bar T to the surface of the dampening-cylinder, substantially as set forth.

2. The combination, with the dampening-cylinder M and trough, the scraper T and holder T', of the elastic roller V and the hanging arms for the same, the cross-shaft 3, and cams and lever for applying more or less pressure of the elastic roller upon the dampening-cylinder, substantially as set forth.

3. The combination, with the dampening-cylinder M and trough, of the cross-bar or scraper T and holder, the elastic roller V and its supporting-links, and the shaft 3, cams and lever-handle, and deflecting-plate P², substantially as specified.

4. The lever-handle 5, swinging block 7, pivoted to the same, and the set-screw 6, in combination with the dampening-cylinder M, the cams 4, cross-shaft 3, elastic roller V, and the links V² by which the same is suspended, for applying pressure to the elastic roller V or relieving the same by moving the swinging block, substantially as set forth.

5. The combination, with the frame and the roll for the web of paper, and the roll upon which the dampened paper is wound, of the water-trough N, dampening-cylinder M, over which the paper passes, the grooved spreader 13, with which the web of paper passes in contact to the dampening-cylinder, and the driving-pulley for rotating the winding-cylinder, and the brake for stopping the same and arresting the movement of the paper, substantially as set forth.

6. The combination, with the rollers for the web of paper, of the dampening-cylinder and a water-trough for supplying the water, and an elastic roller and mechanism, substantially as specified, for pressing the same against the dampening-cylinder to remove the surplus water, substantially as specified.

7. The combination, with the rolls for the web of paper, of a water-trough and a dampening-cylinder receiving the water from the said trough, and an elastic roll for removing the surplus moisture, the said dampening-cylinder also acting to give motion to the roll of paper as the web is wound up, substantially as set forth.

Signed by me this 8th day of October, 1888.

WALTER SCOTT.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.