W. SCOTT.

Paper-Damping Machines.

No. 196,484. Patented Oct. 23, 1877.

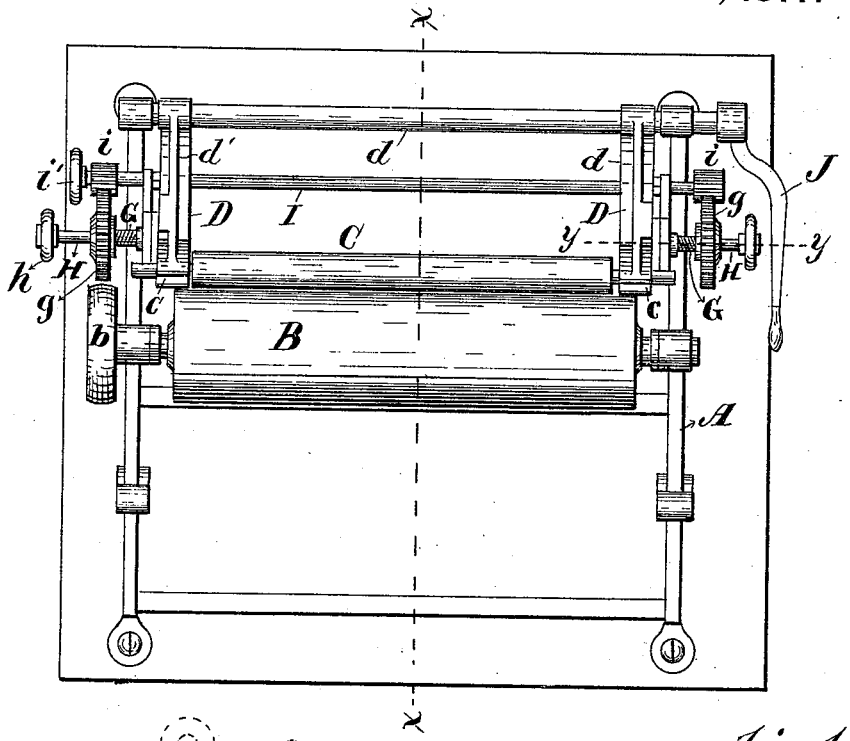

Fig. 1.

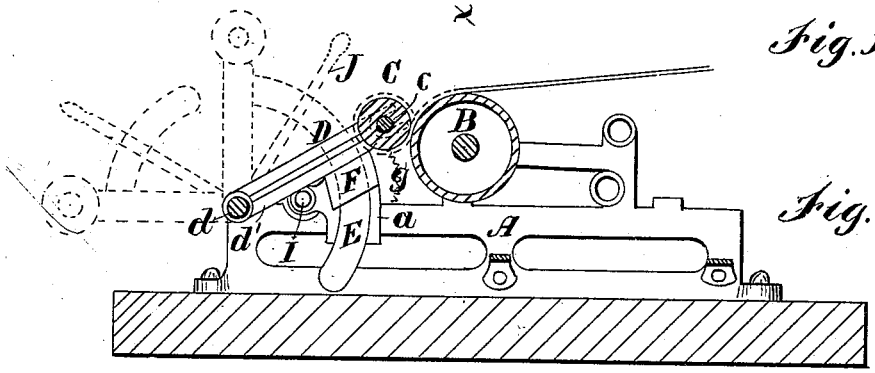

Fig. 2.

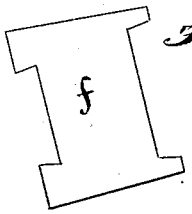

Fig. 4.

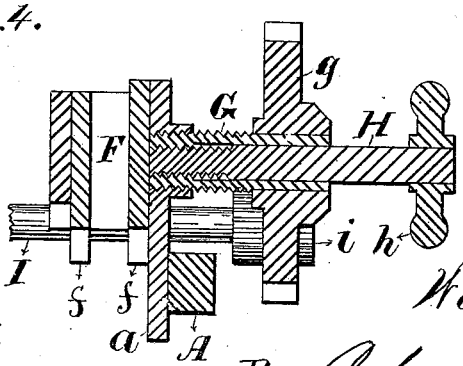

Fig. 3.

Attest

W. C. Coales.

L. A. Bunting.

Inventor

Walter Scott

By. Coburn & Thacher

Attys.

UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM PENN NIXON, OF SAME PLACE.

IMPROVEMENT IN PAPER-DAMPING MACHINES.

Specification forming part of Letters Patent No. **196,484**, dated October 23, 1877; application filed May 31, 1877.

To all whom it may concern:

Be it known that I, WALTER SCOTT, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Paper-Damping Machines, which is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of a machine containing my improvement; Fig. 2, a transverse section of the same, taken on the line *x x*, Fig. 1; Fig. 3, a lateral section of the adjusting device, on an enlarged scale, taken on the line *y y*, Fig. 1; and Fig. 4, a view of one of the clamping-plates on an enlarged scale.

My invention relates to the mechanism for holding the roller on which the paper is wound after dampening down to the friction-cylinder, by contact with which it is rotated; and its object is to provide for the graduation of the force by which the roller is thus held, so that it may be increased and decreased at pleasure, and afford a steady pressure.

The invention consists in a swinging frame carrying the receiving-roller, and provided with arms, passing between bearing-plates, which are adjustable, so as to regulate the friction by which the frame is held.

It also consists in the special devices for adjusting the bearing-plates; and it further consists in various combinations of devices, all of which will be hereinafter more fully set forth.

In the drawings, A represents the supporting-frame, upon which is mounted a cylinder, B. This cylinder is of ordinary construction, and the web of paper passes over it, as usual in dampening-machines, being drawn from a roll supported upon another part of the frame. A driving-pulley, *b*, is mounted upon the same shaft with the cylinder B, by means of which the latter is rotated. The machine is also provided with the usual sprinkling apparatus, arranged in any suitable manner. The receiving-roller C is mounted in a swinging frame, D, consisting of a rock-shaft, *d*, journaled in the frame A, and provided with fixed projecting bars *d'*, which are of sufficient length to reach the cylinder B when the frame is turned down in that direction. The outer ends of these bars are forked, so as to provide open bearings *c* for the journals of the roller C, which is mounted upon the bars *d'*, as shown in Figs. 1 and 2 of the drawings. Curved arms E are attached to the bars *d'*, and project downward therefrom, to pass through guide loops or boxes F, attached to the side pieces *a* of the supporting-frame A. In the boxes F are arranged bearing-plates *f*, which are notched at the sides, as shown in Fig. 4 of the drawings, the notches being fitted to receive the opposite sides of the boxes when they are placed in position, so that the plates are held in the boxes loosely, and can be adjusted back and forth at will. These bearing-plates may be two in number, arranged one on each side of the curved arms E; or, if desired, only one may be placed in each box, on the outside of the arms, the inner side of the boxes acting as the bearing upon the other side of the arms. On each box is mounted a tubular journal, G, the inner end of which has a screw-thread cut upon it, by means of which it is held in place in a bearing in the outer side of the boxes, which is also threaded, as shown in Fig. 3 of the drawings. On the outer end of each of the journals G a gear-wheel, *g*, is fixed. A screw-thread is also cut upon the inside of the tubular journals G for a short distance at their inner ends, and a rod or pin, H, is inserted in the journals G, the inner end of which is threaded, so as to fit the inside screw-thread in the journal. The outer end of the rod H has a small wheel, *h*, by means of which it is turned back and forth.

These devices being constructed and arranged as described and shown in Fig. 3 of the drawings, it is evident that by turning up the rod H the inner end will press against the inside bearing-plate *f* and adjust it inwardly, so that when the curved arms E are passed down into the guiding-boxes they may be held by any force desired by adjusting the outside bearing-plate, as described.

A shaft, I, is mounted in the supports of the boxes F, or in any other suitable bearings on the main frame, and is provided with a pinion, *i*, at each end, which engages with one of the gear-wheels *g* on the tubular shafts G. The

shaft I also has a small wheel, i', at one end, by means of which it is revolved, and it is evident, therefore, that by turning the shaft the gear-wheels g may both be rotated in the same direction, and, therefore, the shafts adjusted simultaneously inward or outward in relation to the boxes, the threads on said shafts being right and left hand.

The setting pins or screws H being turned up so as to project slightly from the inner ends of the shafts G, and adjusted so as to bring the bearing-plates against the curved arms E, it is evident that the force with which said plates are made to bear upon the arms may be readily adjusted by turning the shaft I slightly in one direction or the other.

Now, the roller C being held down against the cylinder B, and rotated by its contact therewith, it is evident that the closeness with which the paper is wound thereon depends upon the force with which it is held against the cylinder, and as this may be graduated by the devices described above, it is plain that the paper may be wound upon the receiving-roller with any degree of tightness required.

The frictional force with which the roller is held down to the cylinder is steady when once adjusted, and consequently the roller is held to the cylinder in a uniform and steady position, yielding as required by forcing the curved arms to slide upward in their boxes.

At one end of the rock-shaft d is a lever, J, attached thereto, by means of which the frame D may be vibrated. This movement of the frame is necessary for the removal of the receiving-roller when full, and its replacement by another. The filled roller is removed by simply throwing the frame back into the position shown by dotted lines in Fig. 2 of the drawings, when it will fall out of its place upon the bars d on account of the bearings c being open. A new roller is then put in place and the frame turned back into position, if it is desired to continue the operation.

By my invention I am enabled to secure a much more steady and uniform pressure of the receiving-roll upon the driving-cylinder than with the weights which have heretofore been used for this purpose, and at the same time I am enabled to graduate the yielding force of the roller with great nicety.

The adjusting devices may be arranged on each side of the machine, as shown and described, or, if desired, on one side only; but the former arrangement is the more desirable, as it will secure a more uniform pressure throughout the length of the roll than would be the case if only one set were used at one end of the roller.

It is evident that the set-screws H may be used without the other adjusting devices, the bearing-plates on each side being adjusted separately and, also, that they may be dispensed with and the journals G made solid, in which case the plates could only be adjusted simultaneously. The mechanism above described, and shown in the drawings, is preferable, however, for with it the plates on each side of the machine may be adjusted both separately and simultaneously, thereby securing uniform pressure on each curved arm.

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

1. In a paper-damping machine, a driving-cylinder, B, in combination with the receiving-roller C; a yielding swinging support, sustaining arms E, attached thereto, and an adjustable friction device for holding the arms in position, substantially as and for the purpose set forth.

2. The swinging roll-supporting frame D, in combination with the arms E, movable bearing-plates f, and a device, substantially as described, for adjusting said plates, substantially as and for the purpose set forth.

3. The guide loops or boxes F, in combination with the bearing-plates f, notched as described, substantially as and for the purpose specified.

4. The adjusting bearing-plates f, in combination with the set-screws H, and the threaded tubular journals G, carrying wheels g, substantially as and for the purpose set forth.

5. The shaft I, provided with pinions i, in combination with the gear-wheels g, mounted on threaded tubular journals G, and the adjustable bearing-plates, substantially as described.

6. The swinging roller-frame D, in combination with the curved arms E, guide-boxes F, provided with movable bearing-plates f, set-screws H, threaded tubular journals G, shaft I, and pinions g i, substantially as described.

WALTER SCOTT.

Witnesses:
L. A. BUNTING,
W. C. CORLIES.