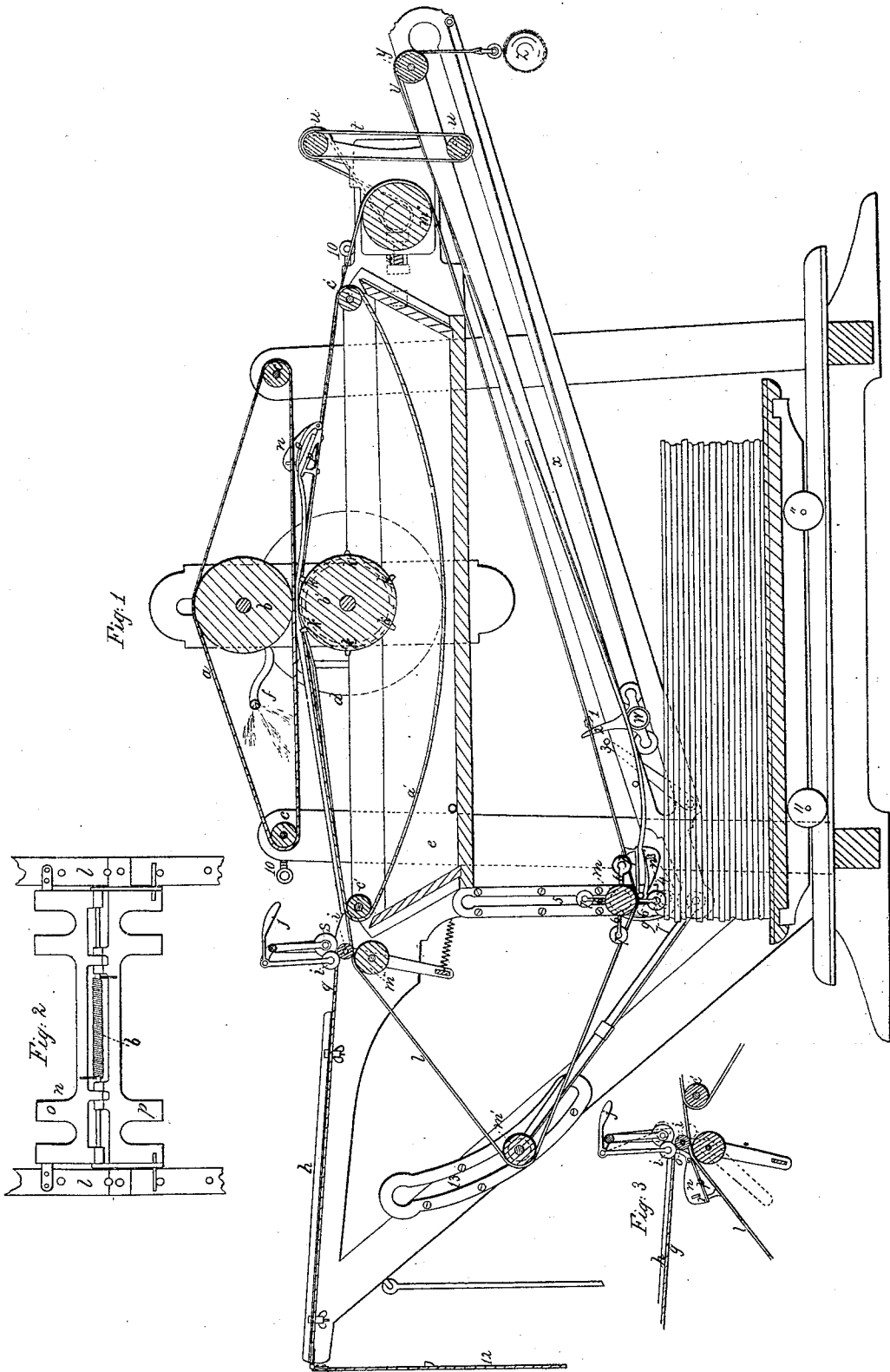


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Paper Netting Mach.

N<sup>o</sup> 10458.

Patented Jan. 24. 1854.



# UNITED STATES PATENT OFFICE.

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## MACHINE FOR WETTING PAPER.

Specification of Letters Patent No. 10,458, dated January 24, 1854.

To all whom it may concern:

Be it known that I, WILLIAM OVEREND, of the city of Cincinnati, in the State of Ohio, have invented certain new and useful Improvements in Machines for Wetting Paper for Printing, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a longitudinal and vertical section of the machine. Fig. 2 is a plan of the nippers (detached). Fig. 3 is a side view of the nippers about to close on the paper.

The letters of reference refer to the same parts in the different figures.

The necessity of giving to paper used in printing a certain degree of dampness in order to adapt it to receive the ink properly, involves a very heavy amount of labor which is now slowly and imperfectly performed by hand. A concern employing six or eight steam presses usually keep two hands busy all day, whereas one hand with this machine can, in the course of one hour, with ease to himself, complete all the damping required for such an establishment, with a better and more uniform result.

The construction and operation of my machine is as follows—Upon the upper part of a frame with suitable uprights, and cross pieces are placed two pressure rollers ( $b$  and  $b'$ ) the latter permanently journaled in the frame and carrying a driving wheel ( $d$ ) and the other placed immediately above, with its journals working in vertical slots. A continuous blanket ( $a'$ ) of some absorbent, and retentive tissue is stretched over the rollers  $c'$   $b'$  and  $c'$  passing between  $b$  and  $b'$  and running through the water contained in the trough  $e$ , placed under the roller  $b'$ . The blanket  $a$  is also saturated by water from a perforated pipe ( $f$ ) placed or leading across it.

$g$  is the table upon which the paper is placed. It is furnished with an adjustable guide  $h$  and a pair of yielding gages ( $i$   $i'$ ) against which the forward edge of the paper is placed, which give way before it when the paper is drawn forward by the nippers  $n$ , which are closed down upon it by passing under the wheels  $s$ , and over the yielding roller  $v'$ . At the same time the gravitating latches  $r$  falling into their places effectually secure or grip the paper. On the ends of

the roller  $b'$  inside of its journal boxes are placed toothed wheels which take into holes in the bands  $l$ , which pass over the pulleys or rollers  $m$   $m'$   $m''$   $m'''$ . To these bands two pair of nippers ( $n$ ) fully shown in Fig. 2 are attached equidistant from one another and extending from one band to the other. At the rear end of the machine is placed a vertical cross piece, which affords journals for the rollers  $u$ ,  $u$ , united by bands, and revolved by a crossed band on one end of the roller  $m''$ . Underneath the trough are placed two slotted guide pieces ( $x$ ) connected at the rear end by a cross piece and there sustained by the lower roller  $u$  which extends through the slots on both sides. They are pivoted at the other end to vertical pieces which traverse in the vertical grooves, 5. These pieces also afford journals to the shaft of the rollers  $m$ , which shaft carries two sets of projecting arms 6 (four in each) furnished with rollers (7.) The sliding pieces are also furnished with cams (4) which are to act upon the latches  $r$  of the nippers  $n$ . The pulleys  $m$  revolve freely on their shaft. Two levers work upon the pivots on which the lower ends of the guides  $x$  are worked and afford journals at their upper ends to the roller  $m'$  which traverses in the curved grooves 13. The object of this arrangement is to equalize and maintain the tension upon the band  $l$  when the piece which carries the roller  $m$  is elevated in the groove 5.

The carriage  $w$  consists of two flanged wheels on each side, running in the slots of  $w$  bearing a connecting piece which affords journals to a roller around which pass several tape bands, attached at one end to the cross piece of the guides  $x$  and at the other end to the roller  $y$  upon which they are wound. The roller  $y$  is furnished with a counterbalance weight ( $z$ ) which is attached to a band wound upon one end of it. The carriage  $w$  has a vertical projection 2 which is struck by a piece (1) projecting laterally from the band  $l$ , thereby forcing the carriage  $w$  downward in the inclined grooves of  $x$  until the projection 2 strikes the bent lever 3 forcing it upward and forward, until it lifts piece 1 clear of 2 and allows the carriage  $w$  to return by the action of the counterbalance  $z$ , upon the roller  $y$ . The yielding roller  $v'$  is journaled on the upper ends of two levers which have their fulcrums on the journals of the roller  $m'''$

the roller *i'* serves, in connection with the wheels *s*, to give the proper direction to the upper lip *o* of the nippers *n*, and yields to allow the nippers to pass when closed and resumes its former position by the action of a spiral spring attached to a cross piece which connects the lower ends of the levers. A platform or truck on wheels is placed under the machine to receive the paper when damped.

The operation of the machine is as follows. A quire or other suitable quantity of paper being placed on the table *g* against the lateral guide *h* and touching the yielding gages *i i*, with the nippers *n* in the position as shown in Fig. 3, the machine is put in motion by power applied to the driving wheel *z*. The roller *b'* draws the blankets *a* and *a'* between the roller *b* and *b'*, they being saturated with water to the proper degree, by the means before described, while the teeth *k* of the wheels on the roller *b'* take into the holes in the bands or endless chains *l* and communicate motion thereto. The upper portion *o* of the nippers *n* coming in contact with the stationary wheels *s*, is forced down upon the paper and held there by the gravitating latches *r*. The nippers are then drawn forward over the yielding roller *i'* carrying the paper under the yielding gages *i* which return to their position after the paper has passed by the action of the counterbalance *j* and between the blankets *a* and *a'* and through the rollers *b* and *b'* there receiving the proper supply of moisture. It is then carried over the roller *m''* and placed in a reversed position on the bands *v*, passing around the roller of the carriage *w*. This movement is regulated and greatly facilitated by the moving bands *t* upon the rollers *u u*. At the same time the carriage *w* is put in motion by the piece 1 striking against the vertical arm 2. It then proceeds under the trough until the arm 2 comes in contact with the bent lever 3, the carriage *w* is then released and drawn back from under the paper to its former position, while the paper is gently deposited on the platform or truck. The nippers coming in contact with two of the arms *b* cause their shaft to revolve one quarter of a circle, thus bringing another pair of arms into a vertical position, with their rollers resting upon the paper just deposited upon the platform and held in position by a spring catch.

It will be perceived that this movement elevates the slides in the grooves 5 with their appendages exactly the height required to correspond with the quantity of paper on the platform, while the levers pivoted to the lower part of the slides force the journals of the roller *m'* upward and forward in the slotted guides 13 thus compensating for the elevation of the pulleys *m* and keeping one uniform tension upon the bands *l*. The nippers then pass under the cams 4, which operate upon the latches *r* causing them to release their hold and allow the nippers to expand by the action of their springs, they then pass on to the starting point. The other pair of nippers by similar movements having in the meantime arrived at that point where the piece 1 strikes against the arm 2 and gives motion to the carriage *w*. The machine continues to operate until the platform is filled, it is then wheeled away and another substituted.

Having thus fully described my improvements what I claim as my invention and desire to secure by Letters Patent is:

1. The yielding gages *i* constructed substantially as described and for the purpose specified.

2. The combination of the endless bands *l*, the nippers *n*, the roller *m''* the rollers *u, u* and their bands *t*, the roller *y* with its bands *v* and counterbalance *z*, the carriage *w* with its vertical arm 2, the pieces 1, the bent levers 3 and the cams 4 constructed and combined substantially as described for the purpose of taking the wetted paper from the blanket and conveying it to the movable platform or truck as set forth.

3. The combination of the sliding pieces moving in the vertical grooves 5 with the arms 6 and the rollers 7 constructed and combined substantially as described, for the purpose of adjusting the depositing apparatus to the height of the pile of paper as specified.

4. The combination of levers with the roller *m'* and curved groove 13 arranged substantially as described, for the purpose of maintaining a uniform tension of the bands *l*, in every position of the depositing apparatus.

WM. OVEREND.

Witnesses:

CHAS. EVERETT,  
S. W. FORREST.