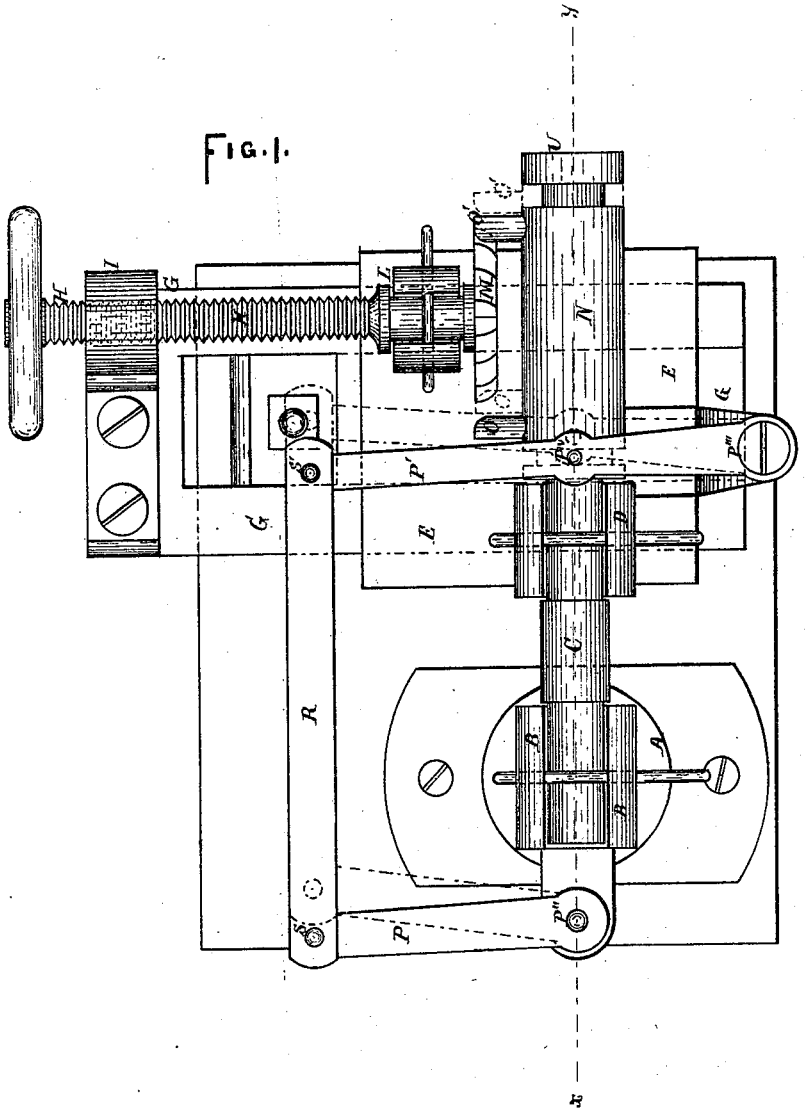
2 Sheets—Sheet 1.

J. A. WHITE.

Wire-Guide for Paper-Machines.

No. 200,367. Patented Feb. 12, 1878.

FIG. 1.



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2 Sheets—Sheet 2.

J. A. WHITE.

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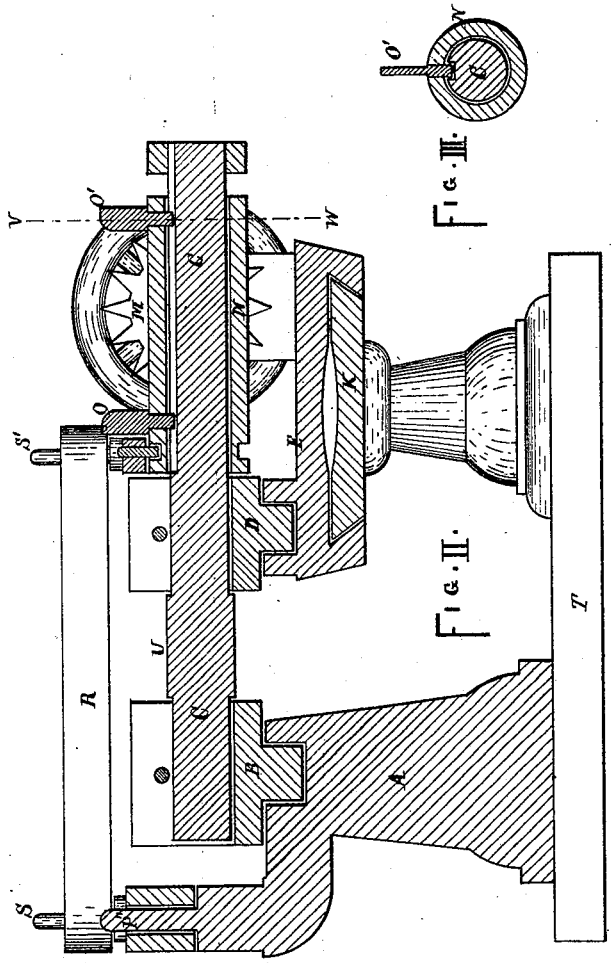

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UNITED STATES PATENT OFFICE.

J. ATWOOD WHITE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO A. FURMAN BLAIR, OF SAME PLACE.

IMPROVEMENT IN WIRE GUIDES FOR PAPER-MACHINES.

Specification forming part of Letters Patent No. **200,367**, dated February 12, 1878; application filed January 21, 1878.

To all whom it may concern:

Be it known that I, J. ATWOOD WHITE, of the city of Philadelphia, State of Pennsylvania, have invented a new and Improved Wire Guide for Paper-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making part hereof.

The object of my invention is to obviate the difficulty experienced from the tendency of the wire cloth in a paper-machine, particularly in a Fourdrinier machine, to depart laterally from its proper position in the operation of expressing the water from the sheet of pulp, and in drying the paper.

The nature of my invention is fully set forth in the accompanying specification and clauses of claim.

In the drawings, Figure 1 is a plan view of my device; Fig. 2, a cross-section on the line *x y* of Fig. 1; Fig. 3, a cross-section of shaft, sleeve, and lug on the line *v w* of Fig. 2.

A is a standard supporting a journal-bearing, B, which is pivoted upon it. Through journal-bearing B passes the shaft C, the other end of which is supported in a journal-bearing, D, upon an arm or bracket projecting upward from a sliding plate, E, which is grooved into and slides backward and forward upon bed-plate G.

H is an adjustable screw-shaft, one end of which sets in a corresponding screw-threaded stationary standard, I, upon the fixed bed-plate G. The other end of this screw-threaded shaft turns freely in a plain journal-bearing, L, mounted rigidly upon the slide E. The screw is left-handed. There are two shoulders or collars on the shaft H, one on each side of journal-bearing L. The space on shaft H between these collars is plain, having no thread, whereby, by turning this shaft H, the journal-bearing L is pushed backward and forward by the action of the screw in screw-journal bearing I.

M is a toothed wheel rigidly attached to that end of screw-shaft H which adjoins the pivoted shaft C. N is a loose sleeve upon shaft C, and keyed so as to be revolved with it, while its looseness allows it to move, in the direction of its length, backward and forward upon said shaft C. Upon and projecting from the outer surface of sleeve N are two pins or lugs, O O′, their edges beveled inwardly from both sides, and these two lugs are separated by a space slightly greater than the outermost diameter of toothed wheel M.

P P^{i} are two bars, one pivoted at P^{ii} to a stationary arm projecting from journal-bearing A, the other pivoted at P^{iii} to an upwardly-projecting arm from the movable slide E, and near its middle is jointed at P^{iv} to the keyed sleeve N upon revolving shaft C by a downwardly-projecting pin which sets in an annular groove around said sleeve, so that the sleeve may turn freely with the shaft, and yet be made to move backward and forward by the lateral motion of bar P^{i}.

R is a cross-bar set down over the long upwardly-projecting guide-pins S S′ upon the ends of bars P P^{i}. T is a base-plate, upon which my machine rests. U is the guide-roll, though I have here shown it much shortened. In the drawings it is the enlarged part of shaft C between journal-bearings D B.

The operation is as follows: The shaft C is revolved by the guide-roll U, of which it forms a part. This turns sleeve N and the lugs O O′, which revolve with the sleeve and just clear the teeth of wheel M. The wire cloth of the machine (a Fourdrinier paper-machine, for instance) passes over the bar R between pins S S′. Now, when this cloth gets out of the middle, or laterally slightly out of its true course, endangering the safety of the wire and paper as it passes into the rolls, it presses against one of the pins S S′. For instance, suppose that the edge of the wire cloth pressed against the pin S′ so as to throw the frame P R P^{i} into the position shown in the dotted lines of the drawing, Fig. 1, which is out of position, the bar P^{i} pivoted at P^{iii} would, by its pin at P^{iv}, throw the sleeve N outward, and make the lug O engage, as it revolves, with the teeth of wheel M, turning it inward, thus shortening screw-shaft H between points I and L, drawing the slide E toward journal I, and with it the moving end of shaft C, pivoted at B, and returning frame P R P^{i} to a position such as leaves lugs O O′ just clearing the periphery of

wheel M. If, on the contrary, frame P R P' is thrown the other way, by the wire cloth pushing against pin S, as shown in the full lines of drawing, Fig. 1, then lug O on sleeve N engages, as shown, with wheel M, and turning shaft H the other way, lengthens the shaft and brings the frame to its true position again.

The pins S S' are not used as guides, in practice, as, in their stead, there are long guide-plates attached to bar R, which pass along each side of the wire-gauze cloth. This gauze-cloth, in practice, does not rest upon the bar R, as the rollers upon which it runs lift it clear of said bar. These are points of construction, however, well known to paper manufacturers. The lugs O O' revolve with shaft C around, so as to strike the wheel M in descending.

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

1. The combination of a revolving shaft, C, loose-keyed sleeve N, having lugs O O', toothed wheel M, screw shaft H, and frame P R P', substantially as and for the purposes described.

2. The combination of loose-keyed sleeve N, having lugs O O', located upon and revolving with shaft C, toothed wheel M, and screw-shaft H, substantially as and for the purpose described.

J. ATWOOD WHITE.

Witnesses:
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