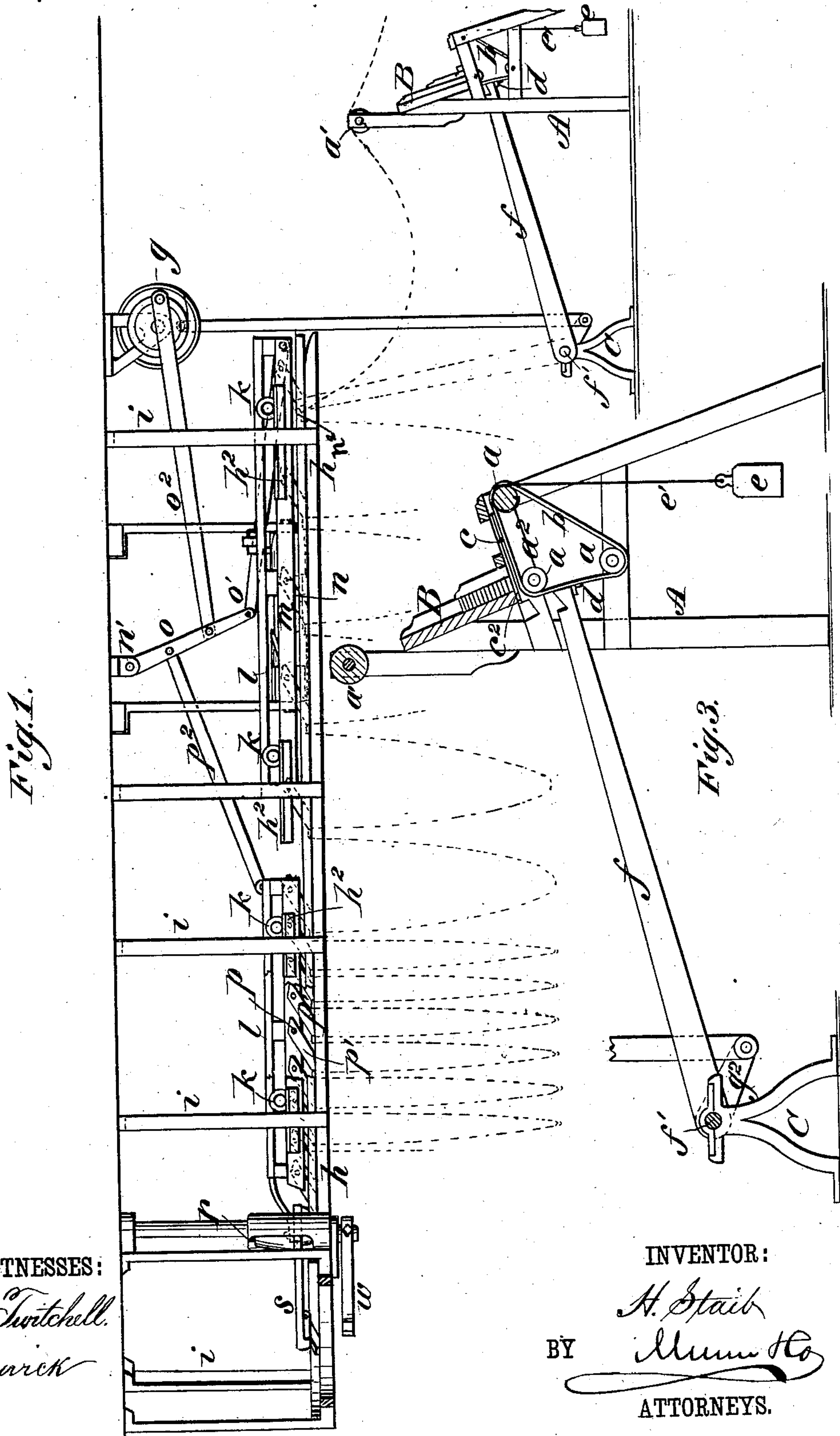


2 Sheets—Sheet 1.

No. 248,227.

Patented Oct. 11, 1881.



WITNESSES:
Donn Twitchell.
C. Seagorick

INVENTOR:
H. Staib
BY *Mum Ho*
ATTORNEYS.

(No Model.)

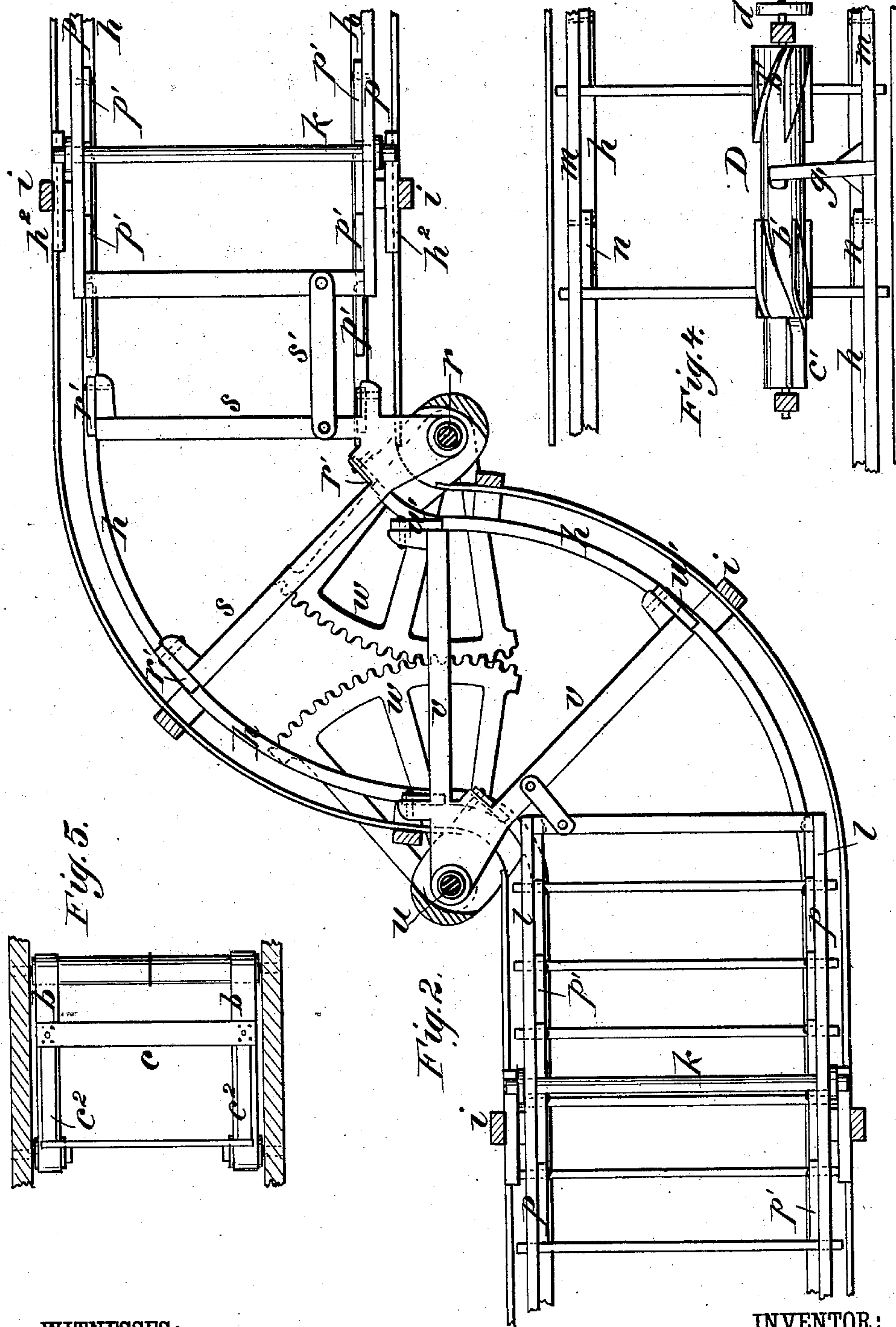
2 Sheets—Sheet 2.

H. STAIB.

PAPER HANGING MACHINE AND RACK.

No. 248,227.

Patented Oct. 11, 1881.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY STAIB, OF NEW YORK, N. Y.

PAPER-HANGING MACHINE AND RACK.

SPECIFICATION forming part of Letters Patent No. 248,227, dated October 11, 1881.

Application filed July 5, 1881. (No model.)

To all whom it may concern:

Be it known that I, HENRY STAIB, of the city, county, and State of New York, have invented certain useful Improvements in Paper-Hanging Machines and Racks, of which the following is a specification.

In the manufacture of paper-hangings the web of paper as it comes from the printing-machine is carried to a rack, where it is suspended to dry in loops on sticks placed at intervals.

My improvements relate to the mechanism for taking the paper and carrying it upon the racks, and to the racks used for supporting the paper, with the object to facilitate such work and render the operation automatic.

The invention consists in certain novel features of construction and combinations of mechanism, hereinafter set forth and claimed, with reference to the accompanying drawings.

In the drawings, Figure 1 is a sectional side elevation of the apparatus. Fig. 2 is a plan view of the rack. Fig. 3 is a side view, in larger size, of the devices for raising the paper and sticks. Fig. 4 is a detail plan view of the device for marking the web of paper. Fig. 5 is a plan view of the feeding mechanism.

Similar letters of reference indicate corresponding parts.

I will first describe the mechanism for receiving the paper and carrying it to the racks, with reference to Figs. 1 and 3.

A is a frame, having side bars, a^2 , in suitable bearings on which are rollers $a a a$, carrying endless belts b , that are connected by a cross-strip, c .

Strips c^2 are connected to the belts lengthwise of the same, and there is also a projecting cross strip or piece, d , fixed to the belts at a suitable distance from the strips c^2 .

B is a box of long and narrow form, fixed above the belt b , for containing a pile of the sticks used to suspend the paper, and placed so that the lower stick of the pile shall rest on the belt. From one roller, a , a weight, e , is suspended by a cord, e' , wound on the roller, so that the weight tends to turn the roller and retain the strips c^2 at the back of the box B.

C is a stand fixed in front of box B, and at a distance therefrom about equal to the elevation of the drying-rack above the floor. On this stand is a rock-shaft, f' , carrying two arms,

$f f$, and provided with an arm, g^2 , from which a rod extends to a driving-wheel, g .

The arms f are of a length to extend to the belt b , so as to strike the projection d thereon when in about a horizontal position, and their ends are notched to receive the stick, as hereinafter described.

Above the stand C the fixed bars $h h$ of the drying-rack terminate, so as to receive the arms $f f$ between them when the arms are raised to a vertical position.

The construction of the rack is as follows: The bars $h h$ are suspended by hangers i , of wood or metal, placed at suitable intervals. Upon bearing-strips h^2 , attached to hangers i , there are rollers k , that support slide-bars $m m$, and the slides are provided with straps l , extending above the rollers, to prevent their dislocation. Upon the slide-bars m pawls n are pivoted, so as to rest on the bars h , and the slides m are connected together by cross-pieces, so that they shall move together. A suitable hanger, n' , fixed above the rack carries a pivoted rock-arm, o , that connects by a rod, o^2 , to the driving-wheel g , and also by a rod, o' , to one of the connecting cross-pieces of the slides m . There is also fitted in the same manner, above bars h , other slides, $p p$, carrying pawls p' , and connected by a rod, p^2 , to the arm o ; but these pawls p' are much closer together than pawls n , and the rod p^2 connects to the arm o nearer the axis than the rod o' , so that the movement given by the arm o to slides p is correspondingly shortened. In both cases the movement of the slides should correspond in length to the distance between their pawls, so that when the paper is put on the rack the loops are first kept some distance apart, in order that they may partially dry before being moved closer together. Extensive rack-surface being required, they extend a long distance, and to economize space can be turned in any direction by a quarter, half, or reverse curve, as required. I have shown a reverse curve with the slides fitted to carry the sticks around such curve. At the center of the first curve is fitted a vertical shaft, r , that carries radial arms s , forming a spider on which are hung pawls r' , that rest on the curved portion of the bars h . The shaft r is connected by a link, s' , to the cross-piece connecting the slides p . A similar shaft, u , provided with arms v ,

that carry pawls u' , is fitted at the center of the second curve, and the two spiders connect by curved segment-racks w , fixed on the outer ends of the respective arms s v , so that they shall move together. The arms of both spiders are placed a proper distance apart to give the required length of movement to the sticks. For a turn of one hundred and eighty degrees or less, only the single spider is required, and the shaft will connect to the straight side bars at each side, but for the reverse curve the two spiders are necessary.

The operation is as follows: The arms f , first moving downward, strike the projection d of belt b and move the belt, and the strips c^2 , being thereby moved beneath box B, carry the lower stick out upon the notched side bars, a^2 , of frame A. The arms f , then moving upward, take the stick by their notched ends, and carry it upward and deposit it on the rack-bars h in front of pawl n , as shown at n^2 . The loop of paper between the rack and friction-roller a' is thus carried to and remains suspended from the rack, while the arms f move back to receive another stick and loop. The slides m then move forward, and the pawls carry the stick and loop of paper. The slides then move back to receive the next stick brought up by arms f , and at the next forward movement both sticks are carried forward. The operation continues thus to any desired extent.

Each loop of paper is of a defined length, and it has been usual heretofore to puncture the web by hand at every third or fourth loop, so as to insure uniformity of the rolls into which the paper is finally made. I provide for marking or puncturing the web automatically by devices applied in connection with the rack-slides, as next described.

D is a roller, fitted in suitable bearings between the slides m and lengthwise of the same. The surface of this roller is formed with inclined or cam grooves b' . From one slide, m , a pin, g' , projects in position for engaging the grooves b' in succession as the slide reciprocates, and thereby gives the roller an intermittent movement on its axis. One end of roller

D is provided with a projection, c' , that comes in contact with the web of paper beneath at each revolution of the roller D. The projection c' may be formed to print, impress, or puncture the paper, and will act at regular distances, according to the number and arrangement of the cam-grooves. For instance, to mark every fourth loop, the roller will be turned by eight movements given by the slide in its reciprocation.

To obtain a record or register of the number of loops, the shaft of roller D will be provided with a pulley, as at d' , fitted for moving a rod that is in connection with a register or counter placed at a convenient point.

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

1. The belt b , provided with strip c and projection d , the box B, and vibrating arms f , combined together and with the rack-bars h , substantially as shown and described, for operation as set forth.

2. The vibrating arms f , in combination with racks h , box B, and mechanism actuated by the arms for delivering the sticks in succession to the arms, substantially as shown and described.

3. The vibrating slide-bars m p , provided with pawls, in combination with the rack-bars h , substantially as and for the purposes set forth.

4. The shaft r and vibrating arms s , provided with pawls, in combination with the curved rack-bars h , substantially as shown and described.

5. In paper-hanging racks, the grooved roller D, provided with the projecting portion c' , and the vibrating slide m , provided with pin g' , combined for operation for the purpose of marking or puncturing the web of paper, substantially as shown and described.

HENRY STAIB.

Witnesses:

GEO. D. WALKER,
C. SEDGWICK.