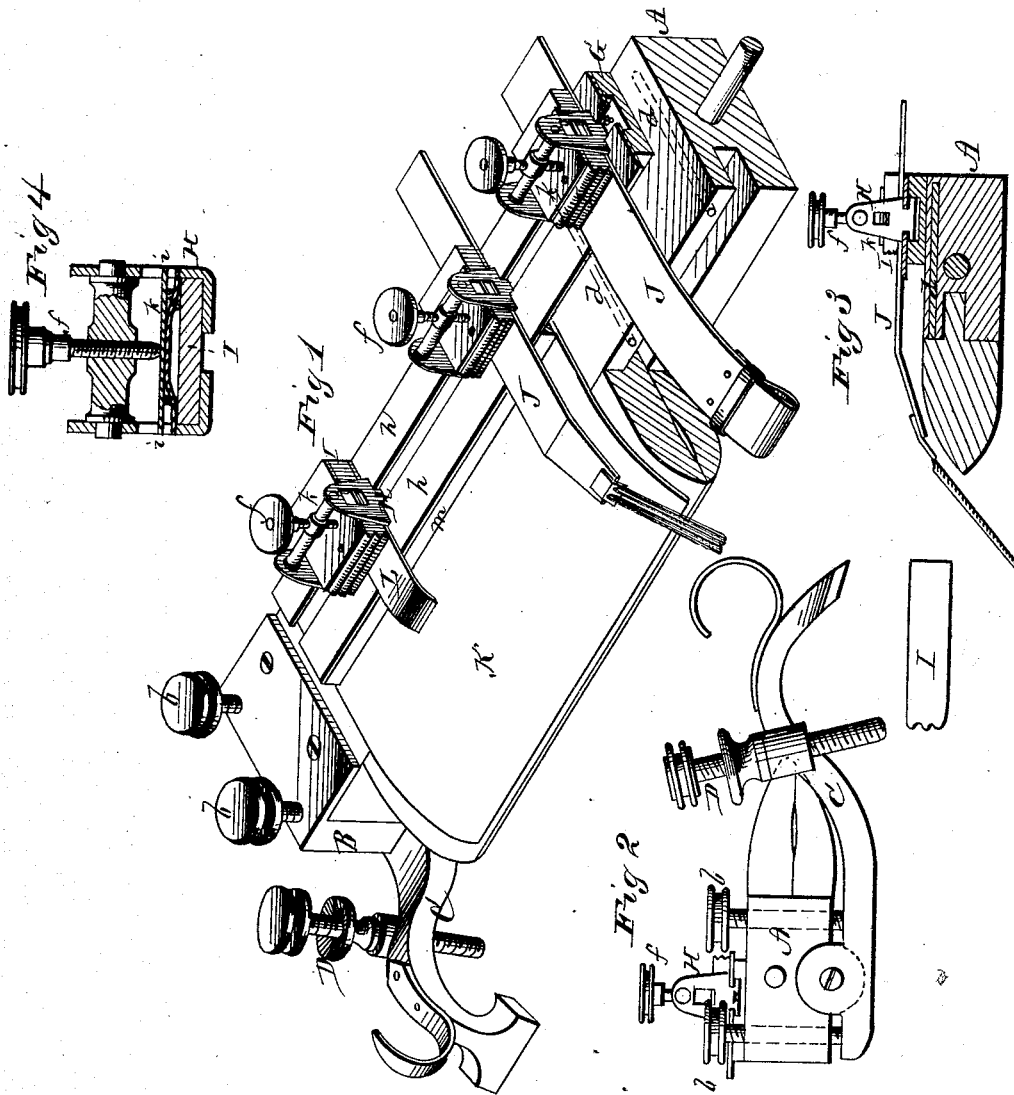


W. O. HICKOK.  
Paper-Ruling Machine.

No. 163,777.

Patented May 25, 1875.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

WILLIAM O. HICKOK, OF HARRISBURG, PENNSYLVANIA.

## IMPROVEMENT IN PAPER-RULING MACHINES.

Specification forming part of Letters Patent No. **163,777**, dated May 25, 1875; application filed April 17, 1875.

*To all whom it may concern:*

Be it known that I, WILLIAM O. HICKOK, of Harrisburg, in the county of Dauphin and in the State of Pennsylvania, have invented certain new and useful Improvements in Paper-Ruling Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

My invention relates to paper-ruling machines; and it consists in certain improvements in the beam and pen-bar, and attachments thereto, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is an end view of the beam and pen-rest. Fig. 3 is a transverse section of the beam; and Fig. 4 is a longitudinal section through one of the chairs for holding the pen-bar.

A represents the beam of a ruling-machine, provided at the end with a metal block or plate, B, in which the pivot *a* is inserted. To the under side of the plate B is pivoted the pen-rest C, the forward end of which is crooked or bent, as shown in Figs. 1 and 2, and provided with the ordinary set-screw D. Through the front and rear of the plate B pass the set-screws *b b* for regulating the amount of oscillation of the beam.

In the beam of a ruling-machine for ordinary ruling, or on striking parts as heretofore constructed, most all the weight is above the pivot they swing on, and it has been found that in the striking operation that position gave a jarring motion. By having the pen-rest crooked, so as to bring the weight so much below the pivots, the jar or sudden motion to the pens is prevented. A weight is commonly employed on the opposite end of the beam for the purpose of holding down the pens; and by having the pen-rest below the pivot on the opposite end of the beam it has the

effect to balance the weight and cause the pens to strike properly.

The beam A is grooved longitudinally above its front edge for the reception of the ordinary clamp E. In making this groove it was found that the top was liable to break, and more liable to warp down, so that a perfectly-fitting clamp would not go in. To obviate this difficulty I bore a series of holes transversely through or nearly through the top part of the beam, and in each hole is driven a rod, *d*, of hard brass. This is done before the groove is made and prevents the breaking of the top part while grooving the beam. It also prevents the top part from warping and strengthens the beam generally.

On top of the beam A is secured a bar, G, which is formed with a longitudinal groove, extending from end to end on the upper side, and on this bar are secured two brass plates or rails, *h h*, which project in front of the edges over which they are placed, as shown in Fig. 1. On these rails slide chairs H H, which may be made of one or more pieces of brass or other metal with a set-screw, *f*, through the center of the top part thereof. Within each chair H is a wooden block, I, with metal plate, *k*, attached to its upper side, said plate being provided with ears *i i*, which project into vertical slots in the sides of the chair for guiding the block and plate. In a recess in the top of the block H, under the plate *k*, is placed a spring, *e*, the ends of which also project into the slots in the side pieces of the chair. The front edge of the block I is rounded on its under side, so that the pen-holder or extension-pen J can be easily inserted between it and the rails on the bar G. By tightening the screw *f* the pen or pen-holder and chair are firmly held to the rails. This chair or device is light and strong. The screw is always above the extension-pens, and many of them can lie along close together. K represents the piece of flannel used on the pen-beam in ruling-machines. This flannel has heretofore generally been held by driving nails into the beam, which injures the same. I hold this flannel by means of a projecting finger, L, fastened in and by the chair; or it may be held by simply inserting a wooden

strip or wedge, *m*, under the projecting edge of the front rail *h*, the flannel being first laid on the beam under said edge.

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

1. The combination, with the beam A, of the curved pen-rest C, having ears, as shown, and pivoted to one end of the beam below the journal thereof, and adjusted by the set-screws *b b*, which pass through the beam, all substantially as set forth.

2. In combination with the pen-beam A and longitudinally-grooved bar G thereon the movable chairs H, having blocks I, plates *k*, and set-screws *f*, passing through a cross-bar

in the chair for holding and adjusting the extensible pen-bars, all constructed substantially as set forth.

3. In combination with the beam A and the bar G thereon the flat metal strip or rail *h*, secured upon the latter bar, and projecting in front thereof, forming a groove for wedging the flannel on the beam, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 9th day of April, 1875.

W. O. HICKOK. [L. S.]

Witnesses:

D. A. KEPNER,  
S. SCHRIVER.