2 Sheets—Sheet 1.

J. M. JONES.

Paper-Cutting Machine.

No. 212,384. Patented Feb. 18, 1879.

Fig. 1.

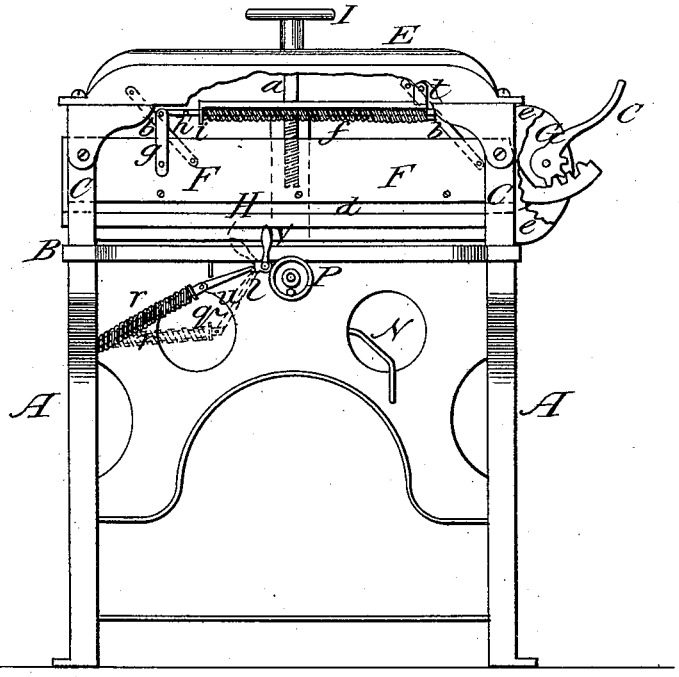
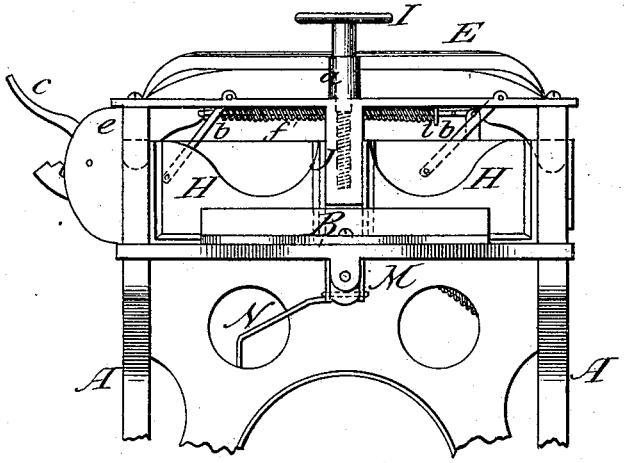


Fig. 2.



Attest:

A. R. Selden

S. L. Selden

Inventor.

John M Jones.

by G. B. Selden

Atty.

J. M. JONES.

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Fig. 3.

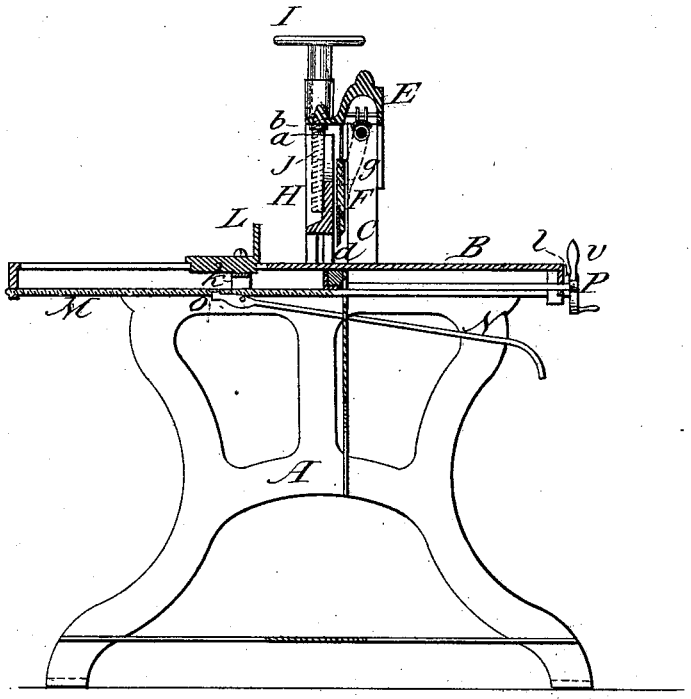
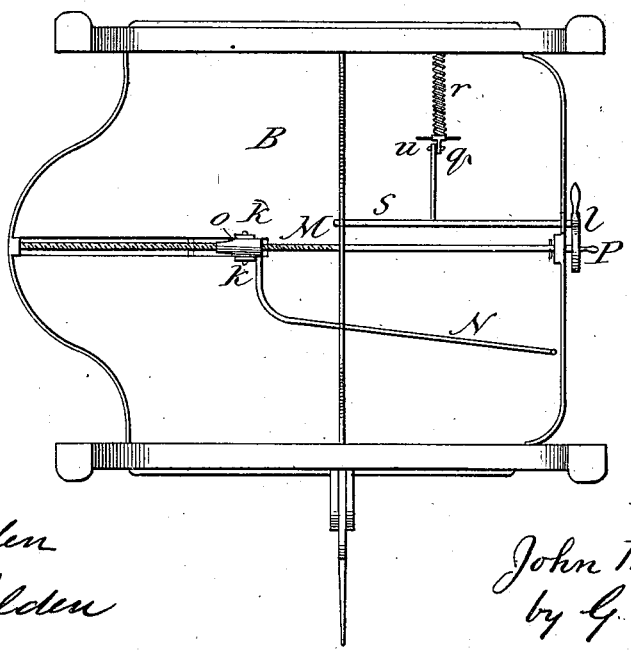


Fig. 4.



Attest:
A. R. Selden
S. L. Selden

Inventor.
John M. Jones.
by G. B. Selden
Atty.

UNITED STATES PATENT OFFICE.

JOHN M. JONES, OF PALMYRA, NEW YORK.

IMPROVEMENT IN PAPER-CUTTING MACHINES.

Specification forming part of Letters Patent No. **212,384**, dated February 18, 1879; application filed March 26, 1878.

To all whom it may concern:

Be it known that I, JOHN M. JONES, of Palmyra, New York, have invented certain Improvements in Machines for Cutting Paper, of which the following is a specification:

My invention relates to that class of paper-cutting machines in which the material to be operated upon is clamped upon a table underneath a reciprocating knife; and it consists in a new method of controlling the extent of the travel of the knife by means of an adjustable pin, which may be placed in any one of a number of holes made in the rod passing through the spiral spring which supports the knife, and operating in connection with a pivoted link to limit the action of the spring, and in a central vertical guide-piece for preventing the binding of the paper-clamp at either end.

It also consists in the combination of a shear-nut with the screw which adjusts the paper-gage, in such manner that the position of the gage with reference to the knife may be readily changed by a hand-lever connected with the nut, and in the combination of a spring-clamp with the gage-adjusting screw, to secure the same in any given position.

In the accompanying drawings, Figure 1 is an end elevation of a paper-cutting machine embodying my invention. Fig. 2 is an end elevation of the paper-clamp. Fig. 3 is a longitudinal section of my improved paper-cutter; and Fig. 4 shows the under side of the table and the arrangement of the adjusting-screw, shear-nut, and hand-lever.

In the accompanying drawings, A A are the side frames of the machine, and B is the table upon which the paper is placed. The side frames A extend upward above the table at each side thereof, and form guides or ways, as shown at C C, between which the knife-stock F reciprocates.

The side frames C C are connected together at their upper ends by a suitable head-block, E, which extends across the machine, and carries the clamp-screw *a* in a suitable journal, and receives the pivots on which the upper ends of the knife-supporting links *b b* swing, the lower ends of which pass into and are pivoted in mortises cast in the knife-stock F. The links *b b* being pivoted to the head-block E and the knife-stock F, and arranged parallel to each other, when the knife-stock is moved across the machine, they cause it to descend obliquely upon the material to be operated on, thus producing the well-known shearing cut.

The knife *d* is attached to the knife-stock in any convenient manner. The knife-stock extends beyond the frames C C at one side of the machine, and turns upward in a curved arm provided with teeth on its upper edge, as shown in Fig. 1. A segmental pinion, G, provided with a hand-lever, *c*, for operating the knife, meshes in the teeth of the rack on the projecting arm of the knife-stock. The reciprocating oblique motion is given to the knife-stock by means of the hand-lever *c*. The pinion G is carried between two projecting pieces, *e*, cast with the frames. The upward motion of the knife is obtained by means of a spiral spring, *f*, Fig. 1. As the knife descends obliquely across the machine, it compresses the spiral spring *f* against the bent end of the link *i* (which is pivoted to the head-block E at *t*, Fig. 1) by means of the rod *h*, placed within the spring, which rod is pivoted into a lug, *g*, cast on the knife-stock. By inserting a pin in any one of the several holes in the rod *h* between the link *i* and the lug *g*, the expansion of the spring, and consequently the vertical travel of the knife, may be limited.

A sliding collar, made adjustable on the rod *h* by means of a set-screw, may be substituted for the pin and holes in the rod *h*.

The clamping-bar H, Figs. 2 and 3, slides vertically between the slide frames C C, and is pressed down upon the paper to secure it in place by means of the screw *a* and hand-wheel I.

In order to prevent the clamping-bar H from binding in its guides in the frames C C, a guide-tongue, J, is cast on the head-block E, and is accurately fitted into a recess formed in the side of the clamping-bar. This guide-tongue is located centrally, and insures the vertical descent of the clamping-bar wherever the paper located underneath it may be placed.

A gage, L, is arranged to slide backward and forward on the table, to and from the knife.

The gage L is connected with the screw M, located underneath the table, by a pair of

jaws, *k k*, Figs. 3 and 4, which pass through a slot in the table and a half-nut, O.

The nut O is attached to a short arm, which is pivoted between the jaws *k k*, and is controlled by a hand-lever, N. By means of this lever, which extends under the table to the end of the machine where the operator stands while adjusting the paper, the nut O is disconnected from the screw M, and the gage L can then be quickly shifted from one position to another.

The screw M is used for slight adjustments of the paper-gage; but when it becomes necessary to shift its position for some distance the screw alone is too slow; but by elevating the handle N the operator is enabled to disconnect the nut O from the screw and to slide the paper-gage at once to any desired position.

The outer end of the screw M is provided with a smooth-edged wheel, P, against which a clamp, *l*, is arranged to operate by means of the spring *r*.

The clamp *l* is carried by a shaft, *s*, Fig. 4, arranged to turn in journals underneath the table, and provided with an arm, *q*.

A spring, *r*, operating against the outer end of the arm *q*, secures the clamp *l* in position against the wheel P, as indicated by dotted lines in Fig. 1, or away from it, against the stop *u*, Figs. 1 and 4, which prevents the arm *q* from throwing over too far beyond the line joining the center of the shaft *s* and the point on the frame where the spring *r* and its supporting-rod bear.

A handle, *v*, serves to operate the clamp *l*, and when the clamp is pressed against the wheel P the screw M is prevented from rotating.

I claim—

1. The combination of the reciprocating knife and knife-stock with the spring *f*, link *i*, pivoted to the head-block E, rod *h*, and means, substantially as described, for adjusting the travel of the said spring and knife, substantially as set forth.

2. The combination, in a paper-cutting machine, of a reciprocating knife, a paper-supporting table, gage L, screw M, nut O, and lever N, operating substantially as set forth.

3. The combination of a reciprocating knife, paper-gage L, screw M, wheel P, clamp *l*, rock-shaft *s*, and spring *r*, substantially as set forth.

JOHN M. JONES.

Witnesses:

H. P. KNOWLES,

JAS. BOURNE, Jr.