

C. Montague.
Paper Cutting Mach.

Nº 53169.

Patented Mar. 13. 1866

Fig. 1.

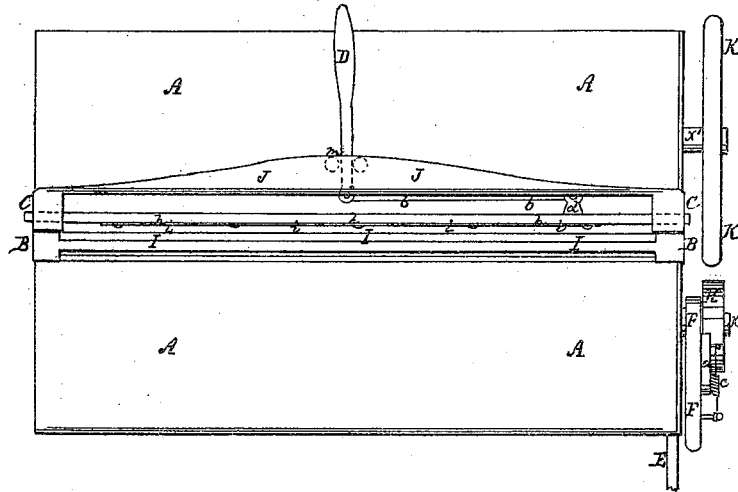


Fig. 2.

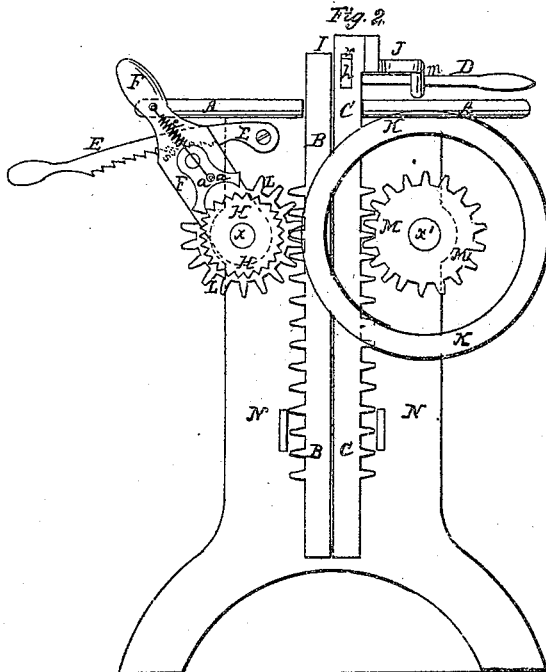
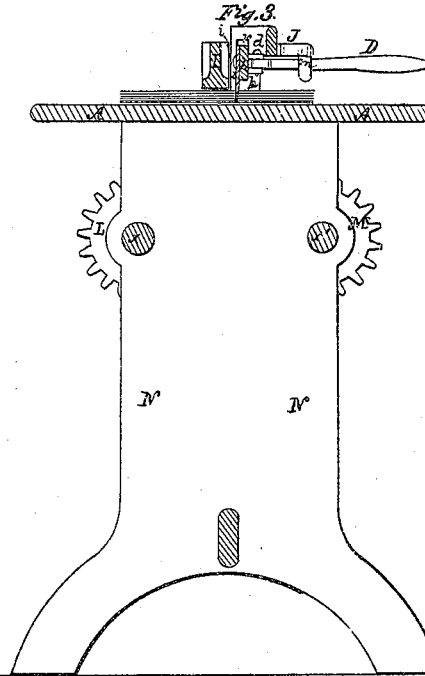


Fig. 3.



Witnesses.
Laurence Holmes Jr
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UNITED STATES PATENT OFFICE.

CHARLES MONTAGUE, OF HARTFORD, CONNECTICUT.

PAPER-CUTTING MACHINE.

Specification forming part of Letters Patent No. 53,169, dated March 13, 1866.

To all whom it may concern:

Be it known that I, CHARLES MONTAGUE, of the city of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Paper-Cutting 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 a part of this specification, in which—

Figure 1 is a plan or top view. Fig. 2 is an end view. Fig. 3 is a central vertical section.

This invention consists in certain novel arrangements of parts in a paper-cutting machine by which it is rendered very simple and efficient, and enabled to be very easily and conveniently operated.

To enable those skilled in the art to understand the construction and operation of my invention, I will proceed to describe it with reference to the drawings.

A is a solid flat table placed upon the top of the supporting end pieces, N. At each end of the table are two upright racks, B C, which slide up and down in suitable guides formed upon the end pieces, N. The racks B are connected at the top and above the table by a cross-bar, I, which, with the racks B, form a frame, the office of which is to hold the paper upon the table during the operation of cutting the paper, as will be presently explained. This frame B I is moved up and down by pinions H, firmly attached to the shaft *x*, one at each end thereof, and which mesh into the racks B and are operated by the pivoted arm E, provided with a reversible pawl, *a*.

The racks C are connected at the top by a strong flat bar, J, also above the table, and forming, with its racks C, the frame which carries the knife. This frame C J is moved up and down by pinions M, which are rigidly secured, one at each end, to the shaft *x'*, and work in the teeth of the racks C, and are turned by the hand-wheel K. In the upper end of each rack C is a slot, *r*. The ends of the knife-bar *h* are supported in these slots, and a reciprocating motion is given to the said bar by vibrating the lever D, the said lever being pivoted in the front edge of the cross-bar J at *m*, and having its rearmost arm connected to a short spur, *d*, on the knife-bar *h* by a rod, *b*.

The knife consists of a long flat blade secured, by screws or rivets, to the bar *h*.

Upon one end of the same shaft, *x*, on which the pinions L are situated is a ratchet-wheel, H, and pivoted on the said shaft is arm F, provided with a reversible pawl, *a*, one or the other edge of which is held in contact with the ratchet-wheel H by a small spiral spring, *e*. It will be seen that by causing one edge or the other of this pawl to act upon the ratchet-wheel the frame B I may be moved up or down to clasp or release the mass of paper upon the table A. This frame may be held in any desired position when the arm F is depressed by allowing the pivoted notched bar E to fall upon one of the pinions L, the notches catching upon the cogs thereof and preventing it from turning. A pin, *s*, projecting inward from the arm H, raises the bar upward out of contact with the pinion when the arm is elevated. The notches in the bar, catching upon the pin *s*, will also retain the frame B I in position by holding the arm F against the upward pressure exerted by the elasticity of the mass of paper compressed by the cross-bar I.

I prefer to use in this machine a knife the cutting-edge of which is formed as follows: The knife is first brought nearly to an edge by filing or grinding in the usual way. It is then covered with wax, and then scratches are made through the wax at the edge of the blade. Thus prepared it is placed in diluted sulphuric, nitric, or other acid which will produce the same result. The acid etches the blade, so as to form thereon a fine and somewhat irregular serrated edged, which has been found superior for cutting paper to either a plain edge or a serrated one, as usually formed upon the knife.

Such being the construction of the machine the operation is as follows: The mass of paper to be cut (represented in red lines in Fig. 3) is placed upon the table A underneath the cross-bar I, and with its edge below the knife *i*. The cross-bar I is brought firmly down upon the paper by raising the arm F, which operates the frame B I by means of the pawl *a* acting upon the ratchet-wheel H, as hereinbefore set forth, the frame being held down upon the paper by the bar E catching upon the pin *s* and preventing the backward or downward motion of the arm F. This being done, the operator grasps the hand-wheel K with one hand and the lever D with the other. By slowly turning the hand-wheel the

knife *i* is brought down upon the paper, and a reciprocating motion given to it by vibrating the lever D. The downward and reciprocating motion thus communicated to the knife causes it to cut through the paper with great ease and facility.

What I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of the reciprocating knife worked by hand, the vertically-moving knife-frame C J, and clamping-frame B I,

toothed racks B C, pinions L M, and shafts *x* *x'*, substantially as herein set forth.

2. The notched bar E, pivoted arm F, reversible pawl *a*, and ratchet-wheel H, arranged with reference to each other and with the rack and pinion of the clamping-frame B I substantially as set forth, for the purpose specified.

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Witnesses:

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