A. W. Currier.

Paper Cutting.

No. 100,506. Patented Mar. 8, 1870.

Fig. 1.

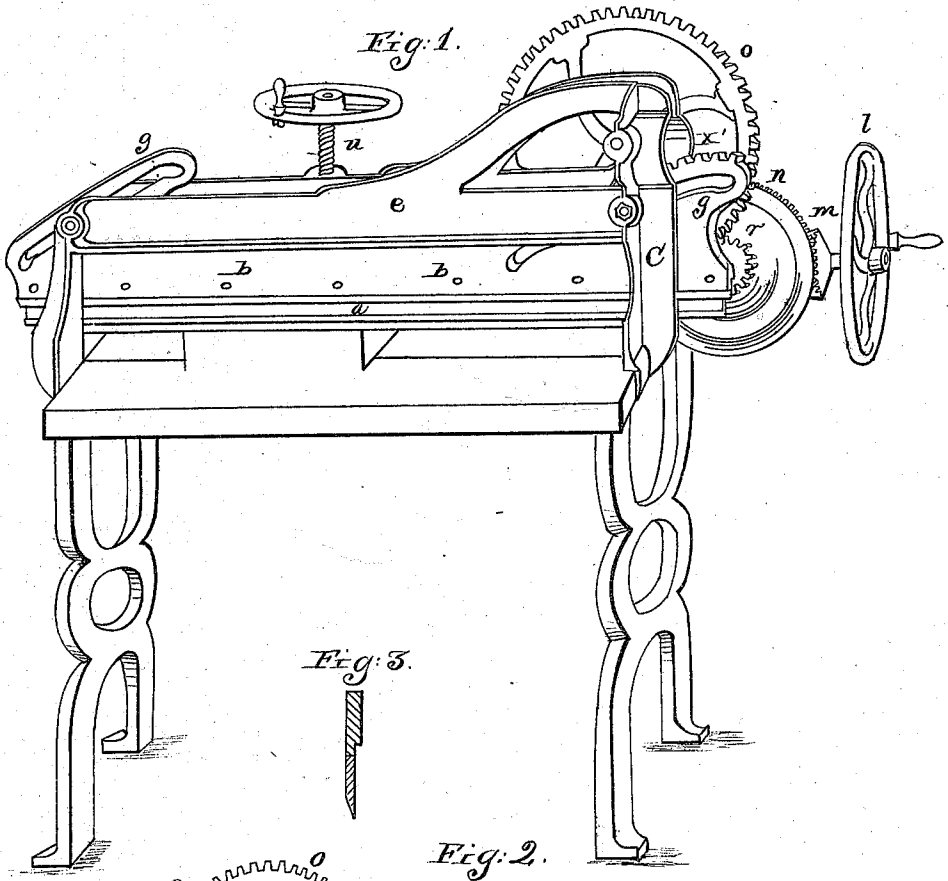
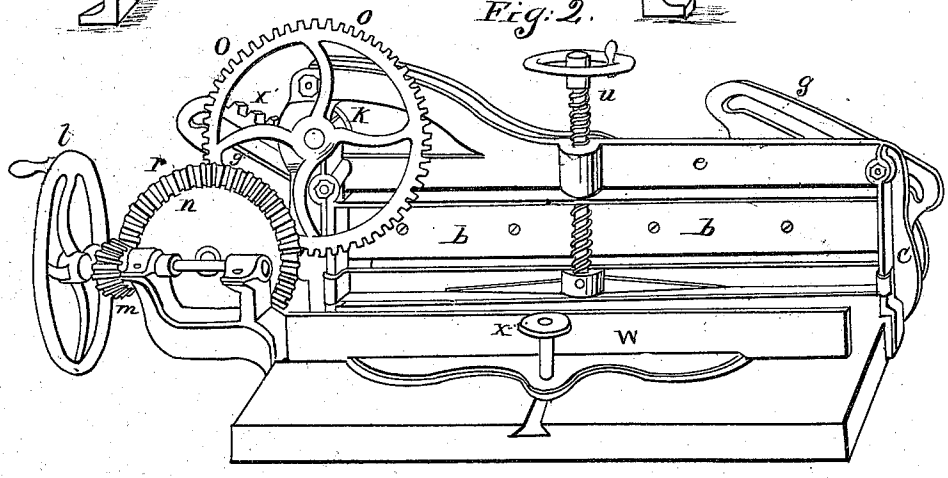


Fig. 3.

Fig. 2.



WITNESSES:

Edward Taggart
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INVENTOR:

Arthur W. Currier

United States Patent Office.

ARTHUR W. CURRIER, OF GRAND RAPIDS, MICHIGAN.

Letters Patent No. 100,506, *dated March* 8, 1870.

IMPROVEMENT IN PAPER-CUTTING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ARTHUR W. CURRIER, of the city of Grand Rapids, county of Kent, and State of Michigan, have invented certain new and useful Improvements in Machines for Cutting Paper; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and the letters of reference marked thereon, and the same are made a part of these specifications.

In the drawings, like letters represent like parts throughout.

Figure 1 is a general front view of my invention;

Figure 2, a general rear view of the same; and

Figure 3, a sectional view of the knife-plate.

My invention consists of the mechanism requisite to impart to a paper-cutting knife a swivel tendency, downward and lateral motion, or rather, a diagonal motion, while being forced through the paper to be operated upon.

To enable others, who are skilled in the branch of business to which the manufacture of my invention belongs, to make the same, I will proceed to particularly describe its construction.

The machine proper is made of cast-iron or like suitable material, save the knife, which is of steel, and rests upon and is fastened to a solid and substantial frame or stand of wood or iron, to which frame it is attached by bolts, as shown.

The knife *a* is an ordinary straight steel knife, screwed firmly to the knife-plate *b b*, which is rabbeted on the back side to receive it. This plate is made of cast-iron, smoothly planed to about an inch in thickness, and provided with two diagonal slots, *g g*, one at each end, placed at an angle of about sixty degrees from a perpendicular line.

C C are two cast-iron posts or standards, connected together by the brace *e* and resting down upon the frame beneath.

These posts are each cast in two pieces, and between them is left a slot or aperture sufficiently wide to allow the knife-plate *b b* to play easily between them.

About ten inches up from the stand, in an ordinary-sized machine, is placed in each post, a bolt, either with or without a friction-pulley thereon, upon which the knife-plate is hung by means of the slots *g g*.

At the upper right-hand corner of the knife-plate, as shown in fig. 1, it is provided with a segment, so called, or toothed edge, parallel with the slot *g*, immediately beneath it, which segment engages with and is operated by the cog-wheel *k*, fig. 2, which is hidden from view in fig. 1 by the intervening post or standard, the shaft to which it is attached, however, being shown in fig. 1 by *d*.

The gearing of the machine is shown more fully by fig. 2, and consists of hand-wheel *l*, set of bevel-gearing *m* and *n*, straight gearing O and *r*, and the cog-wheel *k* before mentioned.

This gearing is arranged as exhibited in fig. 2, to communicate motion from the hand-wheel *l* to the knife-plate *b b*, and to so multiply and increase the power applied at the hand-wheel as to force the knife firmly and steadily through the paper to be cut.

The posts *c c*, as shown in fig. 2, are connected by a brace, *e*, and this brace, in connection with the hand-wheel and screw *u*, forms a clamp for holding the paper while being cut, the lower end of the screw operating in an expanded surface of wood or iron which rests upon and holds the paper.

A gauge, W, adjusted by means of the set-screw *x*, may be used in squaring or sizing paper.

The upper ends of the slats *g g* may be depressed to a horizontal line, if desired, to hold the knife from a further downward movement after the paper is cut; but such depression is not claimed as a part of my invention.

The front posts *c c* and brace *e* should be cast in one piece, and so of the rear posts and brace.

In using my invention, the paper to be cut should be firmly held and pressed together by the clamp above described under the edge of the knife, and the knife then forced down through it by means of power applied at the hand-wheel *l*. After cutting, the knife should be again elevated by a reverse movement of the hand-wheel.

The diagonal passage of the knife through the paper and its steady uniform motion serve to cut the paper very smoothly and with but a slight application of power at the hand-wheel.

Having thus described my invention,

What I claim to have invented, and desire to secure by Letters Patent of the United States, is—

The arrangement and combination of the slotted knife-plate *b b*, so hung upon pulleys as to pass obliquely upward or downward when moved, and the toothed edge or segment *x'*, pinion *k*, gearing O, *r*, *n*, and *m*, and hand-wheel *l*, all constructed and operating as and for the purposes above set forth.

ARTHUR W. CURRIER.

Witnesses:

O. H. SIMONDS,

EDWARD TAGGART.