W. T. SHAFFER.

PAPER-CUTTING MACHINE.

No. 182,964. Patented Oct. 3, 1876.

Fig. 1.

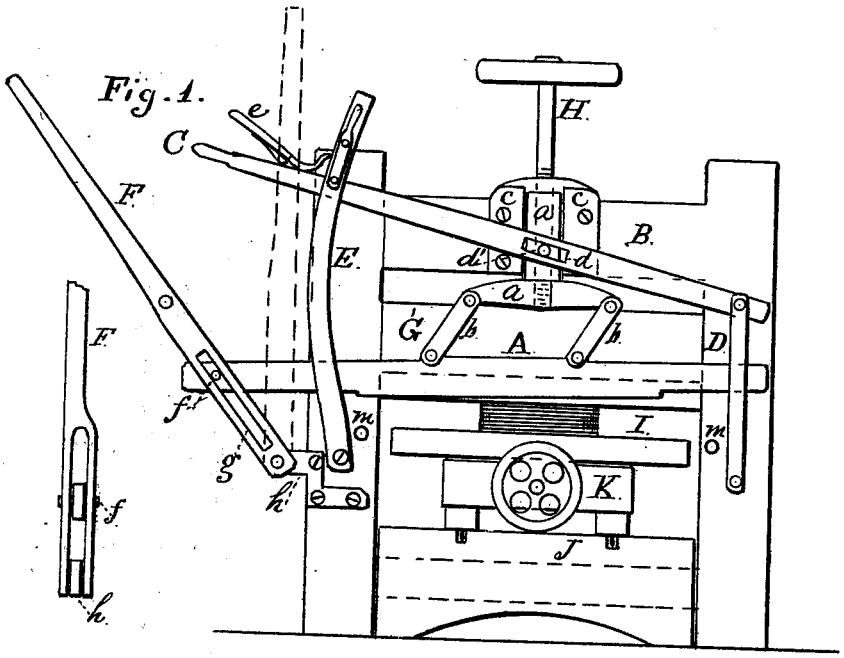
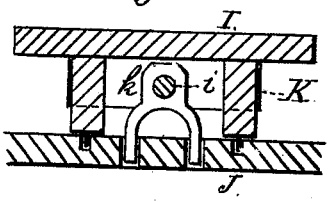



Fig. 2.




Witnesses:
W. Burris
A. P. Lacey

Inventor:
Wm. T. Shaffer.
by G. B. Towles.
Attorney.

# UNITED STATES PATENT OFFICE.

WILLIAM T. SHAFFER, OF FREMONT, NEBRASKA.

## IMPROVEMENT IN PAPER-CUTTING MACHINES.

Specification forming part of Letters Patent No. **182,964**, dated October 3, 1876; application filed February 12, 1876.

*To all whom it may concern:*

Be it known that I, WILLIAM T. SHAFFER, of Fremont, in the county of Dodge and State of Nebraska, have invented certain new and useful Improvements in Machine for Cutting Paper; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a front elevation of my improved paper-cutting machine and standing press combined; Fig. 2, a transverse section, showing device for connecting the screw of removable carriage with the bed of the machine.

Like letters in all the figures of the drawings indicate like parts.

This invention relates to a paper-cutting machine and standing press combined. The old plow-cutter has long been regarded by all printers as a perfect nuisance, and most of the broad-knife machines now in use are too expensive for country printers. The object of the invention, therefore, is to provide a machine that can be readily adapted to meet all the requirements of a country printing-office, as well as all medium job-offices in cities, and not cost more than about the price of the ordinary plow-cutter, or the cheap inferior ones.

The invention consists of pivotal swinging arms for suspending the knife from a sliding holder connected with an automatic adjusting-lever, in combination with slotted guides and an operating-lever, whereby the said knife can be made to work with speed and ease in cutting the paper by a rapid reciprocating motion of the said operating lever, the said automatic adjusting-lever operating automatically to hold and adjust the knife during the operation of cutting the paper; also, of a removable carriage, provided with an adjusting screw and fork, the latter serving to connect the carriage to the bed of the machine, and also admitting of its being readily removed therefrom when it is desired to use the machine as a standing press.

A is the knife, which, unlike most of the knives in paper-cutting machines, is made narrow, and suspended from the sliding holder *a* by means of the pivotal swinging arms *b b*. The holder is in form similar to the letter **T**, but inverted, having the edges of the shank beveled and made to fit and work between two plates, *c c*, which have their inner edges also beveled to correspond with and lap over the edges of the shank. These plates, in connection with a back plate, form a box in which the shank works, and which is let in and bolted or fastened with screws to the top cross-beam B.

The holder may be secured by a rabbet-joint between the edges of the shank and plates, which will answer the purpose as well as, if not better than, the beveled joint.

Attached to the shank is a pin, *d'*, which works in an oblong slot, *d*, in the automatic adjusting-lever C, having its lower end pivoted in the top of the slotted guide D attached to the standard or post on the right of the machine. The opposite or free end of the lever is provided with the pawl *e*, and extends through the slotted curved ratchet and guide E, attached to the standard on the left of the machine, the pawl *e* engaging with the ratchet on the side next to the standard, the outer or front portion of the ratchet forming the guide, in which, and the guide D, the knife is suspended and works. F, the operating-lever, having two elongated slots in its lower end at right angles with each other, the end of the shank of the knife passing through one slot, and a steel guide-pin, *f*, passing through the other, and through the shank of the knife at right angles, thus holding it in place, and allowing it to have free play up and down in the slot. The said lever has its fulcrum-bearing upon an angular projection, *h*, attached to the standard. The knife is worked by a reciprocating motion of the lever. G, the press-beam having tenons on the ends made to fit grooves in the standards, or the standards may have iron guides let into them, and the ends of the beams provided with iron grooves to fit the guides. H is an adjusting-screw, which passes through the center of the top cross-beam and engages with a screw-plate set in on the under side thereof, to give the required adjustment to the press-beam, to which the lower end of the screw is attached, the upper end having a hand-wheel for operat-

ing the screw. I, the removable carriage, consisting of a table or platform mounted upon two beams, provided each on their under sides with rails made to fit and work in grooves in the bed J of the machine. An adjusting-screw, *i*, having a hand-wheel on its end, is arranged to have its bearings longitudinally in end plates K attached to the ends of the beams. The screw passes through the head of a fork, *k*, whose prongs or legs are made to fit corresponding holes, located centrally in the bed J to give the fork a stationary position; thus, by turning the hand-wheel, the threads of the screw, engaging with those in the head of the fork, will cause the carriage to move either way, so that it can be adjusted with nicety to move the paper to the point desired to cut it.

By screwing the press-beam up high enough, and raising the prongs of the fork up out of the holes in the bed, the carriage can be easily removed, and the machine thus converted into a standing press for pressing paper and for holding packages of letter-heads, bill-heads, &c., in place, while the edges are being pasted to make tablets of them, the knife in that case being lifted up out of the way by the hand-lever C, and held by the spring-pawl *e* engaging with the teeth of the ratchet. This feature of the machine makes it highly desirable for small job-printing establishments, where there are no bookbinderies to do such work.

A pin, post, or other similar device, constructed so as to connect the screw with the bed of the machine, and at the same time permit the screw to operate so as to move the carriage, may by used instead of the fork.

The leverage and power obtained by the lever F over the knife are such that the knife can be worked with speed and ease. The lever C, by means of its pawl *e*, engaging with the teeth of the ratchet E, keeps the holder *a* in a rigid position—that is, it cannot be moved upward when pressure is exerted upon the knife, so that when the lever F is moved toward the standard of the machine the knife is forced down into the paper, until the pivotal swinging arms *b b* pass a perpendicular line and assume an inclined position, when lever C will automatically drop or adjust the knife in a position to make another cut, the pawl *e* releasing itself and engaging again with the teeth of the ratchet to retain the holder in a rigid position, as before, so that when lever F is pulled back the knife is forced down still farther in the paper, and so on until the work has been accomplished.

A stop-pin, *m*, is attached to each standard on about a line with the top of the carriage, to prevent the knife from going any farther when it has cut through the paper.

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

1. The knife suspended from a sliding holder by means of pivotal swinging arms, in combination with an adjusting and operating lever, substantially as and for the purpose set forth.

2. The combination of the knife A, provided with guide-pin *f*, pivotal swinging arms *b b*, sliding holder *a*, provided with pin *d'*, lever C, provided with oblong slot *d* and pawl *e*, slotted curved ratchet and guide E, slotted guide D, and lever F, provided with slots *g*, and having its fulcrum upon an angular projection attached to the standard of the machine, substantially as set forth.

3. The removable carriage, provided with an adjusting-screw and a fork, as described, in combination with the bed of the machine, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own invention, I affix my signature in presence of two witnesses.

WM. T. SHAFFER.

Witnesses:

A. C. BRIGGS,

C. H. TOUCRAY.