

L. W. MORSE, Jr.
Paper Cutting-Machines.

No. 156,035.

Patented Oct. 20, 1874.

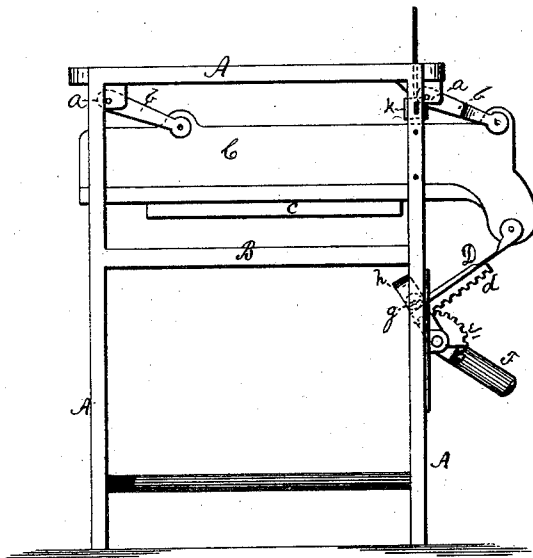


FIG. 1.

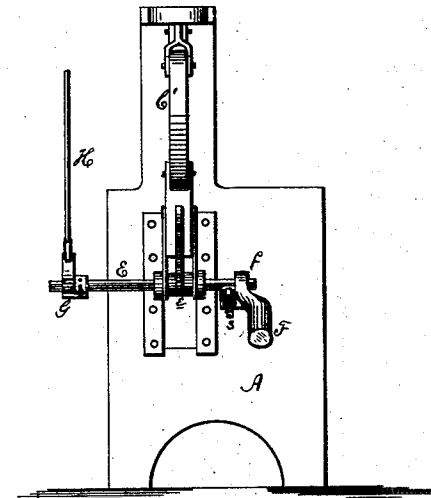


FIG. 2.

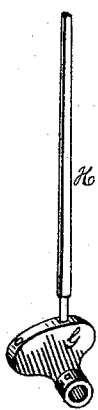


FIG. 5.

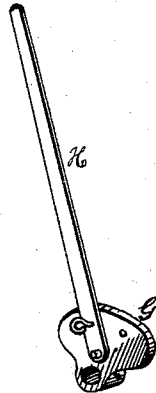


FIG. 6.

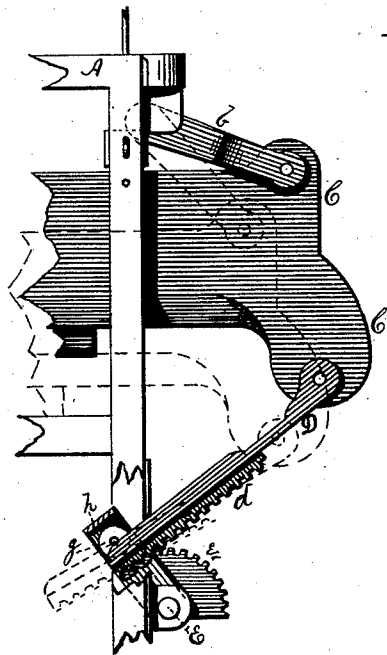


FIG. 3.



FIG. 7.

WITNESSES.

J. Knight.
Edward Goodwin

INVENTOR.

L. W. Morse Jr.
per B. P. Thurston
Att'y

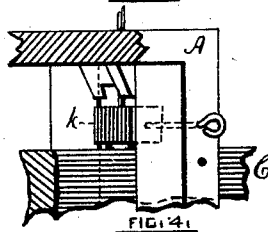


FIG. 4.

UNITED STATES PATENT OFFICE.

LEONARD W. MORSE, JR., OF GROTON, CONNECTICUT.

IMPROVEMENT IN PAPER-CUTTING MACHINES.

Specification forming part of Letters Patent No. 156,035, dated October 20, 1874; application filed September 17, 1874.

To all whom it may concern:

Be it known that I, LEONARD W. MORSE, Jr., of Groton, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Paper-Cutting Machines; and I do hereby declare that the following specification, taken in connection with the drawings making a part of the same, is a full, clear, and exact description thereof.

My improvements relate particularly to that class of machines which embody a knife-bar, suspended by links from the frame of the machine, and operatively actuated by power applied thereto, so as to effect a longitudinal movement thereof.

My invention consists in an improved means for giving the necessary draw-cut movement to the knife-bar and knife used in paper-cutting machines, whereby the machine is made more simple in construction without lessening its efficiency in operation. As an incident of the arrangement employed, the operator is enabled to stand in front of the machine while working the lever to effect the cutting movement instead of at one side, whereby the amount of floor space required for the practical use of the machine is considerably less than is needed for other similar machines of its class.

Referring to the drawing, A represents the frame; B, the table upon which the paper to be cut is placed; and C, the knife-bar, which is hinged to the frame, at *a a*, by the links *b b*, all as well known to constructors of this kind of machinery, and which need no more particular description. The knife-bar C is furnished with a cutting-knife, *e*, and such movement should be given to the knife-bar that the knife can make a draw-cut as it passes through the pile of paper upon the table.

It is also to be understood that the machine is furnished with suitable clamps for compressing and holding the pile of paper in position upon the table, and with a stop, *s*, Fig. 2, to limit the extent of the downward movement of the knife.

One end of the knife-bar C is turned downward, as shown at C', Figs. 1 and 3, and to this portion is pivoted a link, D, upon which is a toothed rack, *d*. In combination with

this rack is a toothed sector, *e*, which is keyed to a transverse shaft, E, arranged across the end of the machine, Fig. 2. This shaft has an arm, *f*, to which a counter-weight, F, is attached for bringing the knife-bar back to its highest position when permitted to do so, and it is also furnished with a head-piece, G, placed at the end nearest the front of the machine, and with which head-piece is connected a lever, H, adjustable in position with reference to the same, examples of which are shown at Figs. 5, 6, and 7. The hinged rack-link D *d* is kept in engagement with the toothed sector *e* by means of a truck-roller, *g*, which bears against the back side of the rack-link, and which, in this instance, is mounted in a vibratory frame, *h*, hinged to the shaft *e*, so that the roller shall be able to accommodate itself at all times to the different angular positions of the link. It is not necessary, however, for practical use that a vibratory frame should be used.

The truck-roller may be mounted in bearings in bosses cast on the frame, and if sufficient play be allowed in the bearings the roller will preserve the proper relation to the link, and act practically well to prevent the teeth of the rack from disengaging with the teeth of the sector.

It will be readily understood from the foregoing that if force be applied, by the operator standing in front of the machine, to the lever H in the direction toward his left hand, the combined action of the toothed sector *e* and rack-link D *d* will be to bring the knife-bar downward toward the table with the drawing movement necessary to effect the cutting of the paper underneath the knife, and when the lever is released the counterweighted arm *f*, Fig. 2, will cause the knife-bar to be elevated again.

If it is desired to cut piles of paper of less thickness, and, consequently, not requiring so great extent of movement of the knife-bar, it is only necessary to lower the buffer *k*, Figs. 1 and 4, against which the back edge of the knife-bar strikes when raised by the counter-weight, and alter correspondingly the adjustment of the hand-lever H, so that when the knife is at its highest elevation the lever will stand in a vertical plane.

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

1. The combination of a pendent longitudinally-vibrating cutter-bar with a hinged rack-link, a toothed sector, and an operating-lever, substantially as described.

2. The combination, with the rack-link and sector, of a truck-roller arranged to engage

with the rack-link, substantially as described, whereby the said link and sector are maintained in proper working relations, as specified.

LEONARD W. MORSE, JR.

Witnesses:

C. H. WILLIAMS,

S. H. CLIFT.