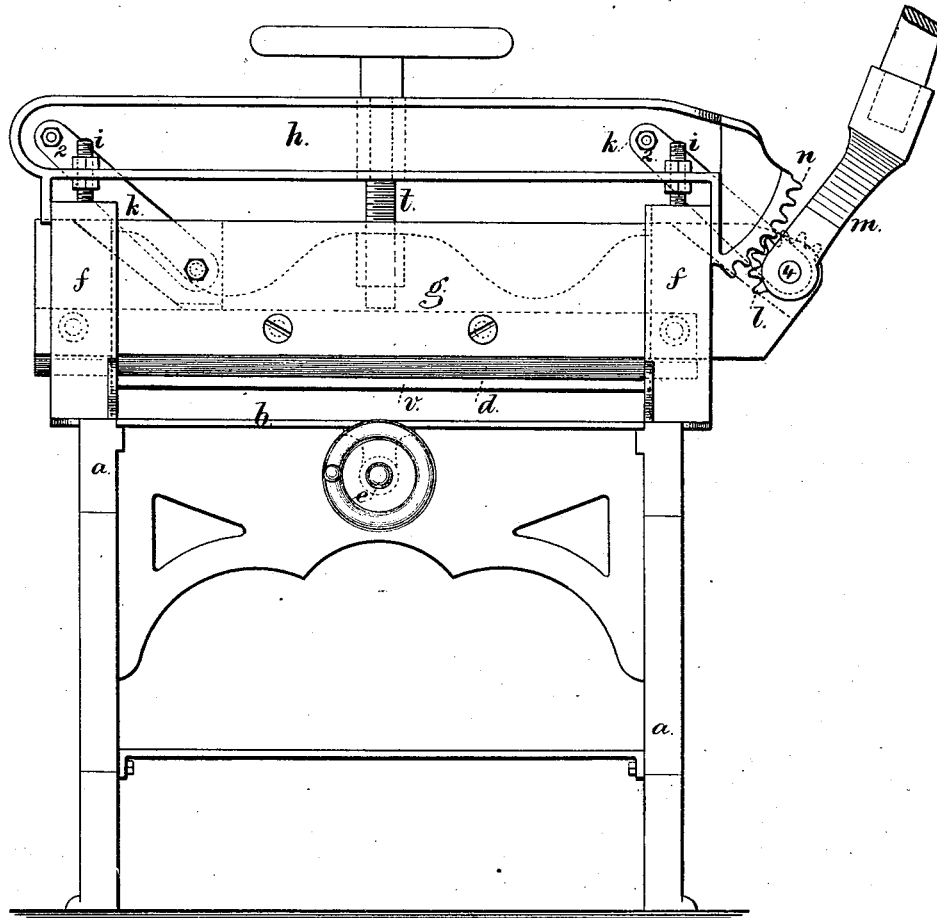


W. I. REID.
Paper-Cutting Machine.

No. 164,660.

Patented June 22, 1875.

Fig. 1.



Witnesses

*Chas. H. Smith
Geo. J. Pinckney*

Inventor

*William I. Reid,
per Lemuel W. Lowell*

att'y

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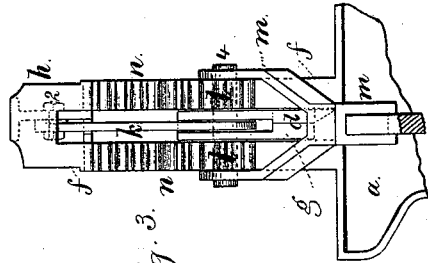


Fig. 3.

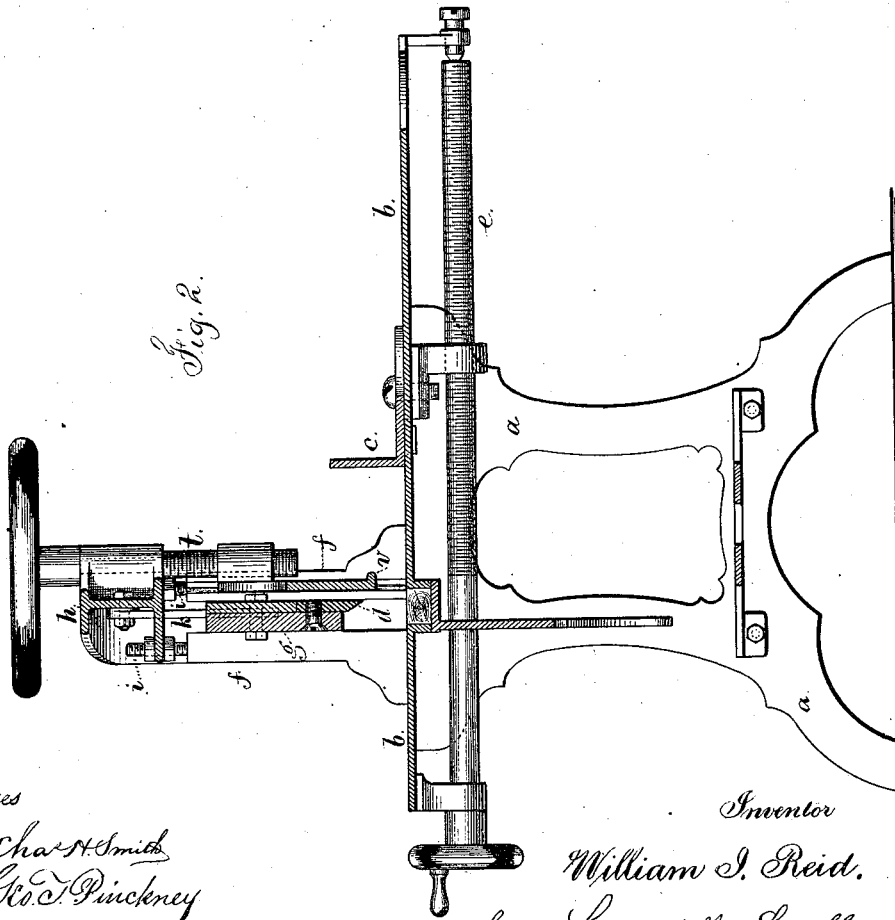


Fig. 2.

Witnesses

Chas. H. Smith
Geo. C. Pinckney

Inventor

William I. Reid.

per *Lemuel W. Serrell*
att'y.

UNITED STATES PATENT OFFICE.

WILLIAM I. REID, OF PALMYRA, NEW YORK, ASSIGNOR TO WATSON B. SMITH, OF OMAHA, NEBRASKA.

IMPROVEMENT IN PAPER-CUTTING MACHINES.

Specification forming part of Letters Patent No. 164,660, dated June 22, 1875; application filed October 8, 1874.

To all whom it may concern:

Be it known that I, WILLIAM I. REID, of Palmyra, in the county of Wayne and State of New York, have invented an Improvement in Paper-Cutting Machines, of which the following is a specification:

Machines for cutting paper have been made with a blade connected by links to a frame, and the blade has received its end movement from a lever. The mechanism is cumbersome, expensive, occupies considerable space, and the shearing cut produced by the endwise movement of the knife varies very much at different portions of the movement.

My invention consists in a pinion applied to the pivot or axis of one of the swinging links upon the knife-bar itself, and preferably upon the pivot, said pinion being actuated by a lever, and the teeth acting against the teeth of a segmental rack that is curved from the fixed center of the said link; thereby the pinion is kept properly in gear with the rack, and the knife is forced downward and endwise by the direct action of the pinion upon the knife-bar.

In carrying out this invention, I prefer to make the rack and pinion double, or with a central slot, in which swings the knife-bar and link; hence the power will be applied uniformly at both sides of the knife-bar, and the head carrying these parts is adjustable, so as to set the knife parallel with the table or bed below, and to compensate any wear from grinding or sharpening the knife.

In the drawing, Figure 1 is a front elevation of the machine. Fig. 2 is a section transversely of the cutter; and Fig. 3 is an elevation of the pinions, segments, and knife-stock.

The frame *a* supports the bed or table *b*, and the adjustable-gage *c*, of any usual character, is moved by the screw *e*. The frames are extended upward above the bed *b*, and form guide-posts *f*, between which the knife *d* and its stock *g* move. Above the posts *f* the head-block *h* is sustained and adjusted by the screws *i*, and this head-block receives the pivots or connecting-joints 2 of the links *k*, said links

being connected at their lower ends to the knife-bar *g*. It is preferable to make the knife-bar *g* either double, as represented in the section, or cast with mortises, in order that the links *k* may be within the knife-bar. The axis 4 of one link *k* also forms the axis for the pinion or pinions *l*. It is preferable to make the pinions double, and place one on each side of the stock, and connect them permanently with the forked lever or lever-socket *m* by means of keys or otherwise; and upon the head-block are the segmental racks *n* for these pinions *l*; hence, as the lever *m* is moved in one direction, the pinions *l* are rolled along the segmental rack to raise the knife by the direct force from the pinions applied at the end of the knife-bar, and when moved in the other direction the pinions are rolled along the segments, and the knife forced down upon the paper by the links as they swing in the arcs of circles, carrying the knife in a parallel horizontal position and cutting with a shearing cut.

The screw *t* and clamp *v* serve to hold the material to the bed while being cut.

I claim as my invention—

1. The stationary segmental rack *n* upon the end of the head-block *h*, and the pinion *l* upon the knife-bar *g*, arranged as set forth, in combination with the lever for actuating the pinion and the links *k*, that simultaneously produce a parallel movement in the knife, and retain the pinion in contact with the segmental rack, as set forth.

2. The two-part pinion *l* at the sides of the knife-bar, connected to the forked lever *m*, in combination with the two segmental racks *n*, one at each side of the knife-bar, and the guide-posts *f* for the knife, to which guide-posts the head-block is adjustably connected, substantially as set forth.

Signed by me this 15th day of June, A. D. 1874.

WILLIAM I. REID.

Witnesses:

IRVIN F. EGGLESTON,
GEO. M. BOWMAN.