E. SCHLENKER.

PAPER-CUTTING MACHINES.

No. 182,230. Patented Sept. 12, 1876.

Fig. 1

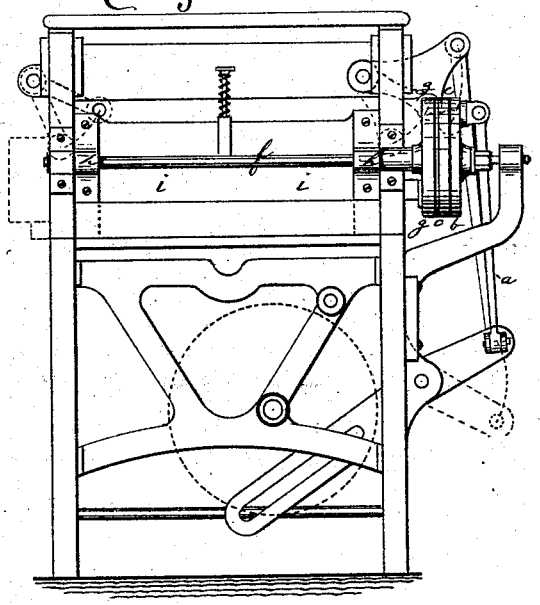


Fig. 2

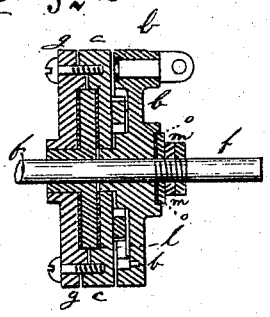


Fig. 4

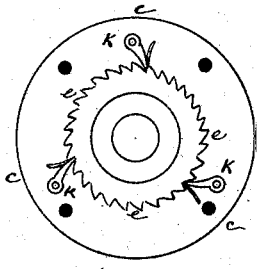


Fig. 3

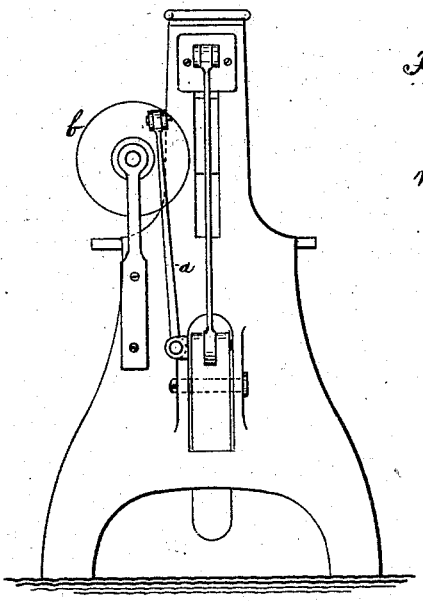


Fig. 6.

Fig. 5

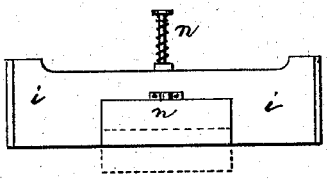
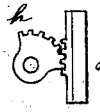


Fig 7



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UNITED STATES PATENT OFFICE.

ERHARD SCHLENKER, OF BUFFALO, NEW YORK.

IMPROVEMENT IN PAPER-CUTTING MACHINES.

Specification forming part of Letters Patent No. **182,230**, dated September 12, 1876; application filed June 6, 1876.

To all whom it may concern:

Be it known that I, ERHARD SCHLENKER, of the city of Buffalo, in the county of Erie and State of New York, have invented Improvements in Paper-Cutting Machines, of which the following is a specification:

The nature and object of my invention is to attach to an ordinary paper-cutting machine a self-acting clamp, operated through friction, by means of plates or other devices, to hold the paper to be cut firmly in its place while being cut, said friction being adjustable, and the power to operate or produce said friction being derived from the power that operates the knife, and said plates or devices being located between said clamp and the power, and the force applied to hold the paper being always sufficient, without regard to the thickness of the paper, and the force applied to raise the clamp being obtained through friction of smaller devices, so as to be only sufficient for this purpose, and not to consume power. I also attach to said clamp an indicator for adjusting the paper, so that the operator can tell where it will be cut before the power is applied.

In the drawings hereto annexed and hereby referred to, Figure 1 is an elevation of a paper-cutting machine showing my improvements. Fig. 2 is an end view of the same. Fig. 3 is a sectional view, internal through the center of the circular plates, as arranged to cause friction. Fig. 4 represents one of the plates. Fig. 5 represents the indicator, by which the paper is adjusted, and to show where the paper will be cut. Fig. 6 is a side view of the same; and Fig. 7 represents the rack and pinion forming the connection between the shaft and clamp.

My improvements can be attached to ordinary paper-cutting machines, and I will not describe any one in particular, although the drawings, Figs. 1 and 2, represent a paper-cutting machine, and shall confine myself to a description of my improvements.

I attach a connecting-rod to the same lever that transmits the movement to the knife, so that the power moving the devices that cause the friction to operate the clamp, and that operates the knife, are the same. This rod is represented by letter *a*, and is connected with the circular plate, letter *b*, so as to revolve the same. Said plate *b* has three pawls upon the inner side, letter *k*. Next to plate *b* is another plate of same size, letter *c*, upon the face of which, next to plate *b*, are ratchets, letter *e*, with which said pawls engage. The opposite face of plate *c* is sunk, so as to receive a smaller plate, letter *l*, which is made fast to the shaft, letter *f*, and this plate, letter *l*, is also sunk into the next plate, represented by letter *g*, and between said plates leather or other yielding material is inserted, so as to cause a yielding friction, and said plates are bolted together, so as to increase or lessen the friction, as desired, and to compensate for the wear. The other plate, into which plate *l* is partly countersunk, is also loose upon the shaft, as well as plates *b* and *c*, and said shaft is connected to the clamp by means of sectional pinions and rack at one end, and near said plates at the other, which operate the clamp. Shaft *f* extends across the machine, and runs in two journals attached to the frame of said machine, and inside of said journals are two sectional or quarter-gear pinions, letters *h h*, which are made fast to said shaft, and which gear into two corresponding racks, which are fastened to the clamp-bar, letter *i*. Said racks are letter *j*. The clamp-bar moves up and down in ways in the frame close to the knife, and, in going down, it moves in advance of the knife, so as to clamp the paper to be cut, and then remains stationary, holding the paper while the same is being cut by the knife.

When the clamp comes in contact with the paper to be cut the shaft, racks on the clamp, and pinions on the shaft, and the internal plate *l* remain stationary, and hold the clamp and paper with great force, and the yielding friction between the plates or other devices which may be substituted will be maintained, holding the clamp and paper, but allowing the knife to continue its movement until the paper is cut.

In order to carry the clamp back into position, but not so high as the knife moves, I arrange for friction sufficient for the purpose without using the great friction to hold the paper, by securing friction between the hub upon the outer face of plate *b* and the washer *o*, which is held in place by a nut and jam-nut, *m*, and as soon as the clamp is carried to its

extreme height, then the dogs or pawls and ratchet, letters *k* and *e*, slip, and the knife is carried to its proper height.

Upon the inside face of the clamp-bar, and next to the cutting-knife, I place what I call an indicator, secured to the clamp-bar, which I make out of a piece of flat metal, with a small handle, with a spring of steel wire to cause it to return to its place. Before applying power to cut the paper the same is adjusted by means of this indicator being pushed down upon the paper, whereby the paper can be properly adjusted, and the operator can tell where the paper will be cut before the power to operate the knife and clamp is applied. This indicator is lettered *n*, Figs. 5 and 6.

In operating the machine, plate *b*, being loose upon shaft, moves, when motion is given to the knife, about one-quarter of a circle, and, by means of the dogs or pawls *k* and ratchet, and the connection with the other plates and with an internal plate, *l*, being fast to the shaft which is connected with the clamp, the said clamp is operated to hold the paper till cut, and is then raised to its place by the friction between the hub and washer of plate *b*.

Having thus described my invention, I claim—

1. The clamp *i*, in combination with the shaft *f* and connecting-rod *a*, and with the clutch mechanism and the mechanism, substantially as described, which operates the cutting-knife, as and for the purpose specified.

2. The friction-disks *b*, *c*, *g*, and *l*, arranged to operate in combination with the shaft *f* and clamp *i*, substantially as and for the purpose specified.

3. The combination of the disks *b c g* with disk *l*, shaft *f*, washer *o*, jam-nut *m*, and with the clamp *i* and connecting-rod *a*, substantially as and for the purpose specified.

4. The indicator *n*, constructed substantially as described, and arranged to operate in combination with the clamp *i*, for the purpose specified.

ERHARD SCHLENKER.

Witnesses:
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