S. M. CLARK.

Paper-Cutting Machine.

No. 129,319. Patented July 16, 1872.

Fig. 1.

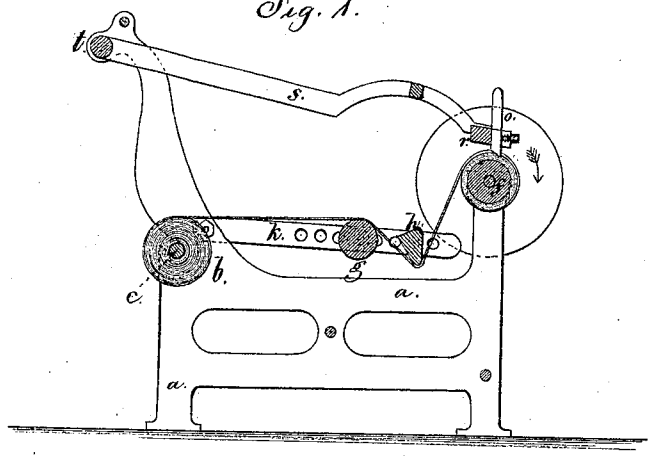
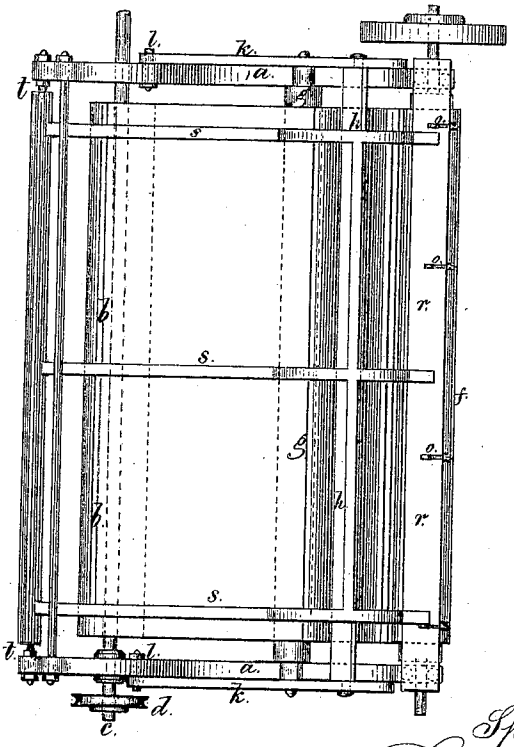


Fig. 2.



Witnesses

Geo. A. Wastie

Chas. H. Smith

Inventor

Spencer M. Clark,

Lemuel W. Serrell

attij.

UNITED STATES PATENT OFFICE.

SPENCER M. CLARK, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN PAPER-CUTTING MACHINES.

Specification forming part of Letters Patent No. 129,319, dated July 16, 1872.

To all whom it may concern:

Be it known that I, SPENCER M. CLARK, of Washington, in the District of Columbia, have invented an Improvement in Cutting Paper for Telegraphic and other purposes; and the following is declared to be a correct description of the same.

Difficulty has been experienced in obtaining accurate strips or ribbons of paper wound sufficiently tight to retain their form as rings when transported or handled. These ribbons of paper are liable to vary in width and to be loosely rolled; hence, in telegraphic-machines, they are liable to either clog in the guide-trough, or else not remain in proper position. The efforts to cut and wind such paper have been very various, but the knives became dull rapidly, and the cutting operation was uncertain and costly. By my improvement the cutting operation is performed with great rapidity and absolute accuracy; the paper is wound firmly immediately before the cutting is effected; and there is no unusual wear upon the knives tending to make their edges dull. I make use of a frame carrying knives placed at the required distances apart, and this frame rises as the roll of paper increases in diameter. A tension mechanism is applied to the paper to cause the same to wind sufficiently tight, and the knives cut through the outer layer of paper immediately after it is wound.

In the drawing, Figure 1 is a vertical section of the winding and cutting mechanism, and Fig. 2 is a plan of the same.

The frame *a* of the machine is of usual size and construction, adapted to the size of roll and width of paper. The roll of paper *b* is supported upon a shaft, *c*, that may be made in sections, so as to be easily inserted into or withdrawn from the roll of paper, and to this shaft a pulley, *d*, and weighted cord are applied to furnish the required friction to prevent the paper-roll revolving too freely. Any other suitable tension apparatus may be employed. The paper is wound upon the roller *f* by revolving said roller by a crank-handle or pulley and suitable power, and this roller *f* may be made sectionally or divided longitudinally, so as to allow for drawing the shaft out with facility from the roll of cut paper after the said roll has been wound tightly upon such shaft. The guide-roller *g* and stretcher-bar *h* are shown as mounted upon frame *k* that is attached at *l*, and may be weighted to give the necessary tension to the sheet or web of paper as it passes from the roller *b* to the roller *f*. This roller *g* and stretcher-bar *h* might be fixed in the proper position for accomplishing the aforesaid object. The knives *o o* are placed in the bar *r* at the proper distance apart, and their ends are sharpened so as to present an oblique cutting-edge to the paper as it moves beneath them. The bar *r* is in a frame, *s*, hinged at *t*, and of the required weight, or weighted, to press the knives to the paper and cut the same. This bar and its knives are raised by the roll of paper as it increases in size; and it will be apparent that the paper is detained by the roller *g* and stretcher *h* with the force required to spread the paper smoothly and wind the same tightly; and the paper is wound as a whole sheet upon the roll and cut afterwards; but the cutting is only of one thickness at a time, because the knives cut through the outer thickness of paper after it is wound upon the roll. The previous incisions form guides for the points of the knives; hence there is no risk of the knives bending; and the cut is performed at a short distance from the point of the knife. There is no risk of the separate ribbons being broken by the tension, nor of some being wound more loosely than the others. Where the strips or ribbons of paper are required of different widths the knives are to be positioned accordingly.

I claim as my invention—

1. The knives, arranged to act upon the outer layer or sheet of paper as wound into a roll, and cut the same into ribbons, substantially as set forth.

2. A range of knives mounted in the bar of a swinging frame, in combination with the roll for winding the paper and the stretcher *h* for applying the necessary tension to the sheet of paper, substantially as set forth.

Dated March 2, 1872.

S. M. CLARK.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.