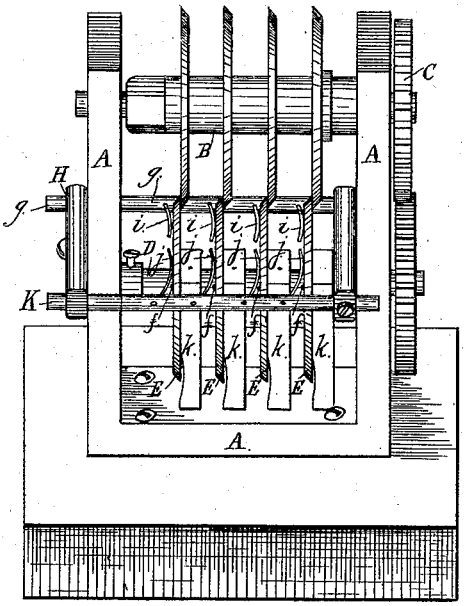
A. JUDSON.

Rotary Paper-Cutter.

No. 164,920. Patented June 29, 1875.

Fig. 1.



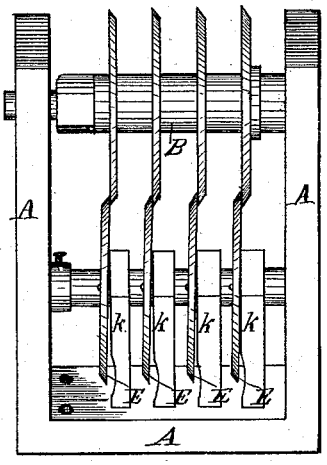


Fig. 2.

Witnesses:

Geo. T. Smallwood Jr

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Inventor:

Augur Judson

By John J. Hatted
atty.

UNITED STATES PATENT OFFICE.

AGUR JUDSON, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF HIS RIGHT TO D. HOWARD JUDSON, OF SAME PLACE.

IMPROVEMENT IN ROTARY PAPER-CUTTERS.

Specification forming part of Letters Patent No. **164,920**, dated June 29, 1875; application filed June 9, 1875.

To all whom it may concern:

Be it known that I, AGUR JUDSON, of the city of Newark, county of Essex and State of New Jersey, have invented certain Improvements in Machines for Cutting Paper into Strips for Telegraphic and other Purposes; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention consists in employing, in conjunction with a series or gang of disk cutters fixed on a revolving shaft, another series or gang, peculiarly applied upon another shaft, whereby they may be adjusted to a proper inclination relative to the plane of revolution of the non-adjustable or other gang; and it further consists in certain details of construction.

In the accompanying drawings, Figure 1 represents a front view of a machine illustrating my invention; and Fig. 2, a similar view of the frame, showing the inclination of the adjustable cutters on one shaft relatively to the fixed ones on the other shaft.

A is a frame-work of any appropriate kind; B, a revolving shaft, driven by any suitable gear, C, and carrying any desired number of circular or disk cutters secured thereon. D is another or lower shaft, parallel with shaft B, and having a gear engaging with and imparting motion to gear C. On this shaft D I place a series of disk cutters, E, none of which are rigidly secured to the shaft, but, on the contrary, so applied thereon that while they are caused to revolve with the shaft they may be adjusted thereon to a slight inclination to the axis of their shaft, and held yieldingly to such position, this inclination insuring a proper clean shearing cut as the paper passes between the upper and lower cutters.

An efficient means which I have devised to effect this end is as follows: Each disk cutter E is placed upon its shaft loosely enough to permit a limited lateral play and lateral adjustment, a key or pin, *f*, or other proper detent, compelling it, however, to revolve with the shaft. A bar or rod, G, made adjustable in its support or bearings H, is provided with a series of pins or projections, *i i*, &c., each of which serves to limit the inclination to which its adjacent cutter may be deflected out of parallelism with the cutters on the shaft B. A series of springs, *j j*, &c., secured to an adjustable rod or bar, K, bears, one against each of the disks, forcing one side of each disk in one direction until its opposite side is brought against the limiting guides or pins *i i*, the other surface or face of each disk near its center bearing against any suitable post, sleeve, or stop, *k*, whereby it shall not be capable of being moved beyond the predetermined fixed limit in that direction.

It will be seen that the degree to which the bar G is shifted, so as to move its guides or pins *i i* away from the back of the disks, will determine the degree of inclination of the cutters E relatively to the upper cutters, and to the shaft D, and that the springs *j j*, exerting, as they do, a constant pressure against the back of the disks at one side of their centers, keep them up to their work under any and all adjustments required. At the same time the edges of the disk, where the cutting or shearing of the paper takes place, are always in proper working contact.

It will be further observed that I avoid all liability of straining or tearing the paper, which is incident to all machines where paper is pulled through the machine against the edges of stationary knives, for in my machine the cutters are the partial feeders, and assist to draw the paper through.

The paper may be fed to and received from the cutters by any proper means.

If paper strips of different widths be desired, the same shafts, which may be of any required length, may have different gangs of cutters, those of one gang being set farther from each other than those of another; by this means producing at the same time strips of different widths.

I claim—

1. In combination with two parallel shafts and a series of disk paper-cutters fixed on one of them, a series of disk cutters on the other

shaft, and revolving therewith, but adapted to be adjusted to an inclination to the plane of revolution of the other series, substantially as and for the purpose set forth.

2. In combination with the shaft D and its loosely-attached cutters E, the springs *j*, guide-pins *i*, and stops *k*, applied and operating relatively to the cutters, substantially as and for the purpose described.

AGUR JUDSON.

Witnesses:
GEO. T. SMALLWOOD, Jr.,
WALTER PARSONS.