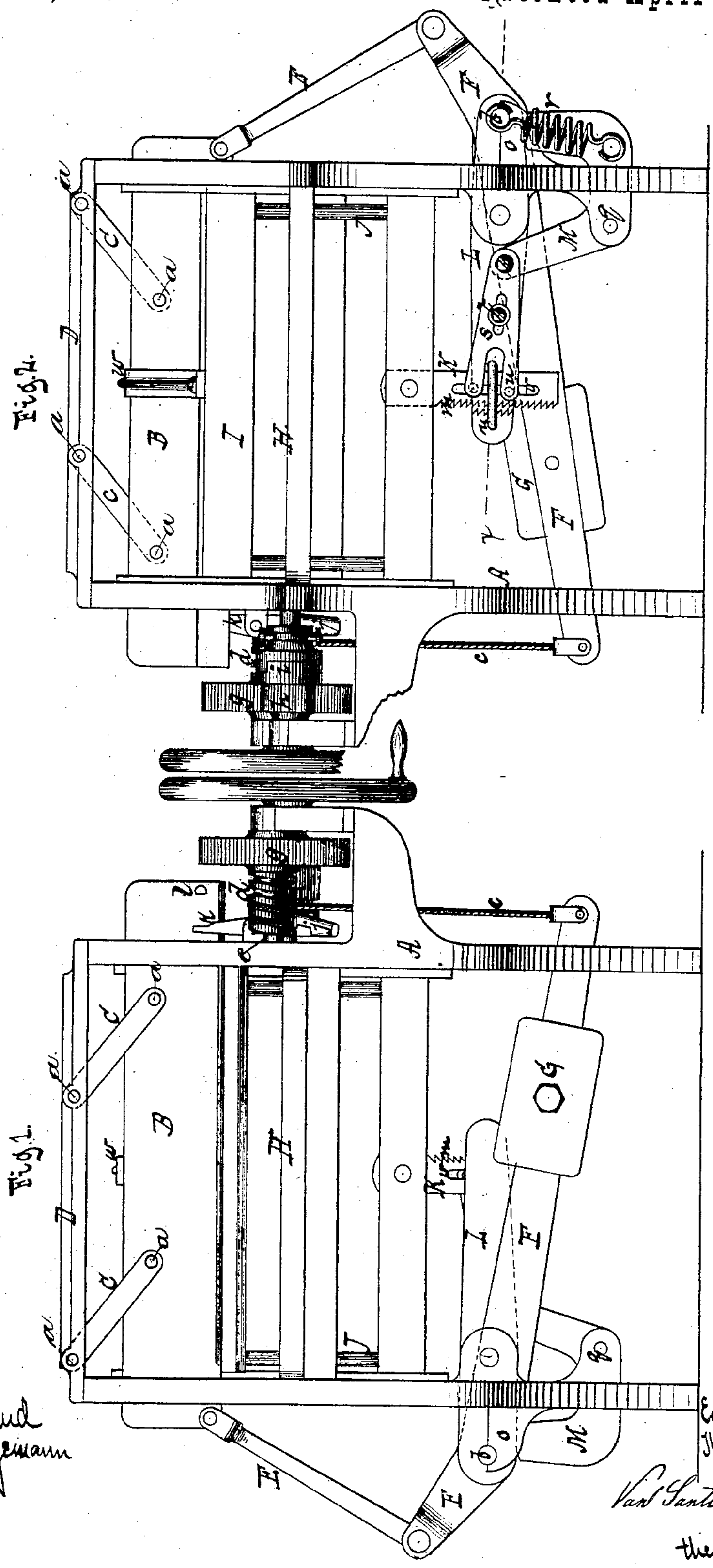
2 Sheets—Sheet 1.

E. R. & T. W. SHERIDAN.

MACHINE FOR CUTTING PAPER.

No. 190,089. Patented April 24, 1877.



Witnesses
Otto Hufeland
Ogo Brueggemann

Inventors.
Edwin R. Sheridan
Theodore W. Sheridan
by
Van Santvoord & Hauff
their attys.

2 Sheets—Sheet 2.

E. R. & T. W. SHERIDAN.

MACHINE FOR CUTTING PAPER.

No. 190,089. Patented April 24, 1877.

Fig.3.

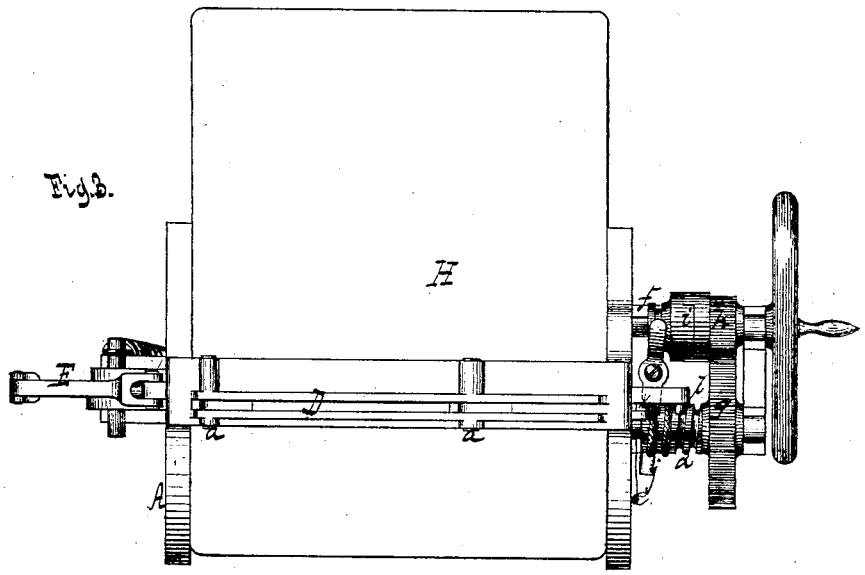
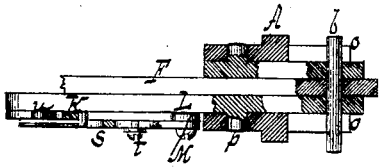


Fig.4.



Witnesses.

Otto Hupland

F. Hugo Bruggemann

Inventors

Edwin R. Sheridan.

Theodore W. Sheridan

by

Van Santvoord & Hauff

their attorneys.

UNITED STATES PATENT OFFICE.

EDWIN R. SHERIDAN AND THEODORE W. SHERIDAN, OF BROOKLYN, N. Y.

IMPROVEMENT IN MACHINES FOR CUTTING PAPER.

Specification forming part of Letters Patent No. **190,089**, dated April 24, 1877; application filed March 28, 1877.

To all whom it may concern:

Be it known that we, EDWIN R. SHERIDAN and THEODORE W. SHERIDAN, both of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Machines for Cutting Paper and other Materials, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a front view. Fig. 2 is a rear view. Fig. 3 is a plan or top view. Fig. 4 is a section in the plane *x x*, Fig. 2.

Similar letters indicate corresponding parts.

This invention consists in the combination with the knife, the clamping frame, and with the levers which impart motion to the knife and the clamping-frame, of a movable fulcrum, which rises when the knife begins to bear upon the material to be cut, thereby imparting to the clamping-frame a downward motion, and carrying the clamp to bear down upon the material to be cut with a pressure commensurate to the resistance which the knife has to overcome in cutting. With the knife, the clamping-frame, and the levers which impart motion to the same, is also combined a locking mechanism, which retains the clamp firmly in position during the operation of cutting, and which is released as soon as the knife has passed clear through the material to be cut. With the knife is combined a pin or projection, which acts on a clutch-lever, so as to release the shaft which imparts motion to the knife, and to allow said knife to rise as soon as it has passed clear through the material to be cut.

In the drawing, the letter A designates a frame, which forms the bearings for the working parts of my cutting apparatus. B is the knife, which is suspended from the links C C, swinging on pivots *a a*, which have their bearings in the top bar D of the frame A. Said knife is guided in slots formed in the side pieces of the frame A, and one of its ends is connected by a rod, E, with one end of a lever, F, that has its fulcrum on a pivot, *b*, and extends through the frame A, as shown in Figs. 1 and 2 of the drawing. From the opposite end of said lever extends a rope or chain, *c*, to a drum, *d*, which is firmly mounted on a counter-shaft, *e*, that has its bearings in the frame A. This counter-shaft is geared together with the driving-shaft *f* by means of cog-wheels *g h*, the cog-wheel *g* being firmly mounted on the counter-shaft, while the cog-wheel *h* turns loosely on the driving-shaft, and is thrown in gear with the same by means of a clutch, *i*, which is operated by a clutch-lever, *j*. When the driving shaft is rotated in the proper direction, and the clutch is thrown in gear, the chain *c* winds up on the drum *d*, and by the action of the lever F the knife is caused to swing down, and to act on the material to be cut with a drawing motion. With the clutch-lever *j* is combined a releasing-lever, *k*, and as soon as the knife has passed clear through the material to be cut, and before it is depressed on the platform supporting said material, a pin, *l*, secured in the knife, strikes the releasing-lever, the clutch is thrown out of gear, and the knife is raised automatically by a weight, G, secured on the lever F.

The material to be cut rests upon a platform, H, secured in the frame A, and in order to enable the knife to produce a clear cut the material must be clamped down tight upon the platform while the action of the knife takes place.

This object is effected by a clamping-bar, I, which is secured to a gate, J, that slides up and down in the main frame A. To the lower part of the clamping-gate J is pivoted a bar, K, provided in one edge with ratchet-teeth *m*, pointing upward, and as the knife begins to bear upon the material to be cut said rack-bar K is thrown in gear with a dog, *n*, and the clamping-bar is depressed upon the material to be cut by the following mechanism: The fulcrum-pin *b* of the knife-lever F rests upon two lugs, *o*, which project from the main frame, and it extends through the outer end of a lever, L, that swings on a pivot, *p*, and to the inner end of which is secured the dog *n*. With the lever L is combined a U-shaped lever, M, which has its fulcrum on a pivot, *q*, secured in the main frame, and the outer end of which is drawn up by means of a spring, *r*, in contact with the lever L, while its inner end is pivoted to a slide, *s*, which is guided on a pin, *t*, secured in the lever L, and from which projects a pin, *u*, into a slot, *v*, in the

rack-bar K. When the knife begins to bear down upon the material to be cut the fulcrum-pin of the knife-lever F moves upward, the rack-bar K is thrown in gear with the dog *n*, and the lever L, being connected at its outer end to the movable fulcrum *b*, is depressed at its inner end, so as to bring the clamp down upon the material to be cut; and since the upward motion of the fulcrum *b* increases with the resistance to be overcome by the knife the clamp is depressed upon the material to be cut with a pressure commensurate to the resistance to be overcome by the knife in cutting. When a cut has been completed and the knife is released, the fulcrum *b* sinks back upon the lugs *o*, the lever L depresses the outer end of the U shaped lever M, the rack-bar K is thrown out of gear with the dog *n*, and as the knife is raised by the weight G it strikes a hook, *w*, secured to the clamping-bar I, so as to raise said bar clear off the material to be cut.

By these means a machine is obtained which can be operated with great facility, which produces clear cuts, and in which all danger of injuring the knife by depressing it upon the platform which supports the material to be cut is avoided.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a machine for cutting paper and other materials, the combination, with the knife, the clamping-frame, and with the levers which impart motion to said knife and clamping-frame, of a movable fulcrum, *b*, which rises when the knife begins to bear upon the material to be cut, and causes the clamping-bar to bear upon the material to be cut with a pressure commensurate to the resistance to be overcome by the knife, substantially as herein shown and described.

2. The combination, with the knife, the clamping-bar, the levers imparting motion to the same, and the movable fulcrum *b*, of a locking mechanism, consisting of a rack-bar, K, and dog *n*, substantially as and for the purpose set forth.

3. The combination, with the knife B and platform H, driving-shaft *f*, clutch *i*, and clutch-lever *j*, of a pin or projection, *l*, secured in the knife, and a releasing-lever, *k*, all constructed and operating substantially as and for the purpose set forth.

In testimony that we claim the foregoing we have hereunto set our hands and seals this 27th day of March, 1877.

EDWIN R. SHERIDAN. [L. S.]
THEODORE W. SHERIDAN. [L. S.]

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.