(No Model.) 3 Sheets—Sheet 1.

S. SMITH.

PAPER CUTTING MACHINE.

No. 602,882. Patented Apr. 26, 1898.

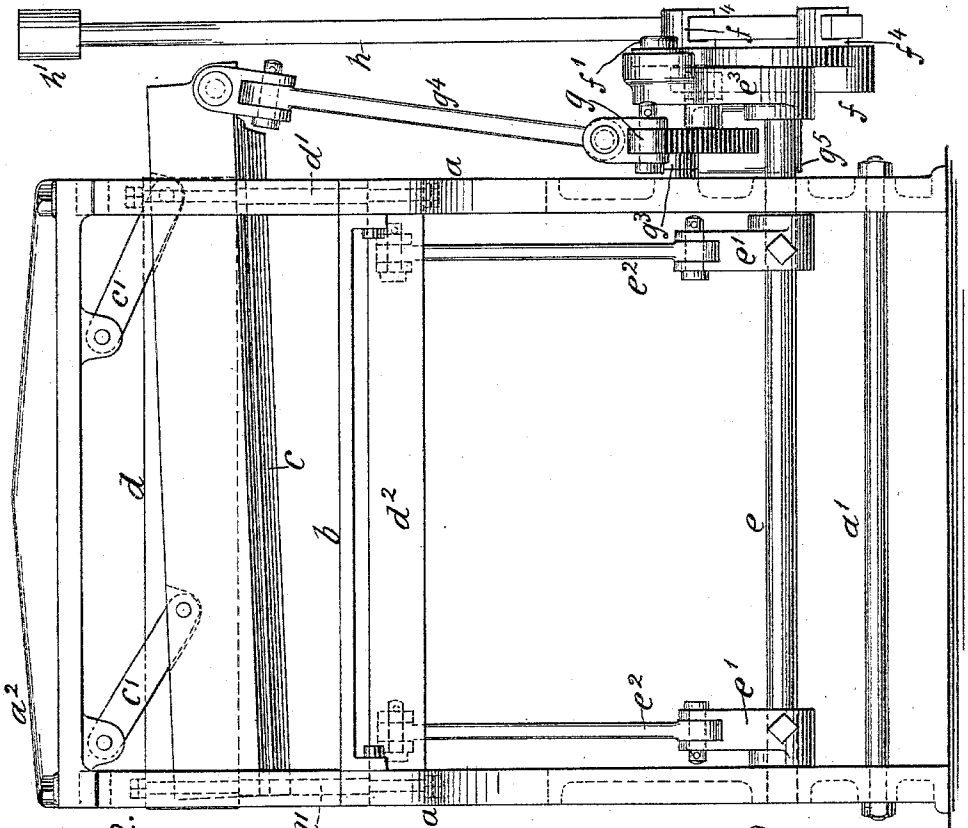


FIG. 2.

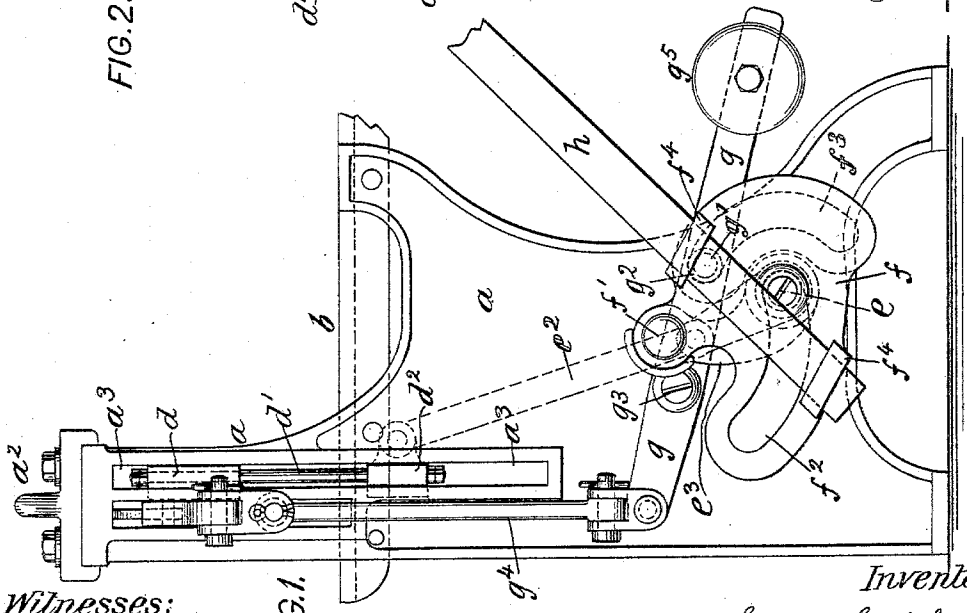


FIG. 1.

Witnesses:
John. Becker.
William Miller.

Inventor:
Swan Smith
by his attorneys
Roeder & Briesen

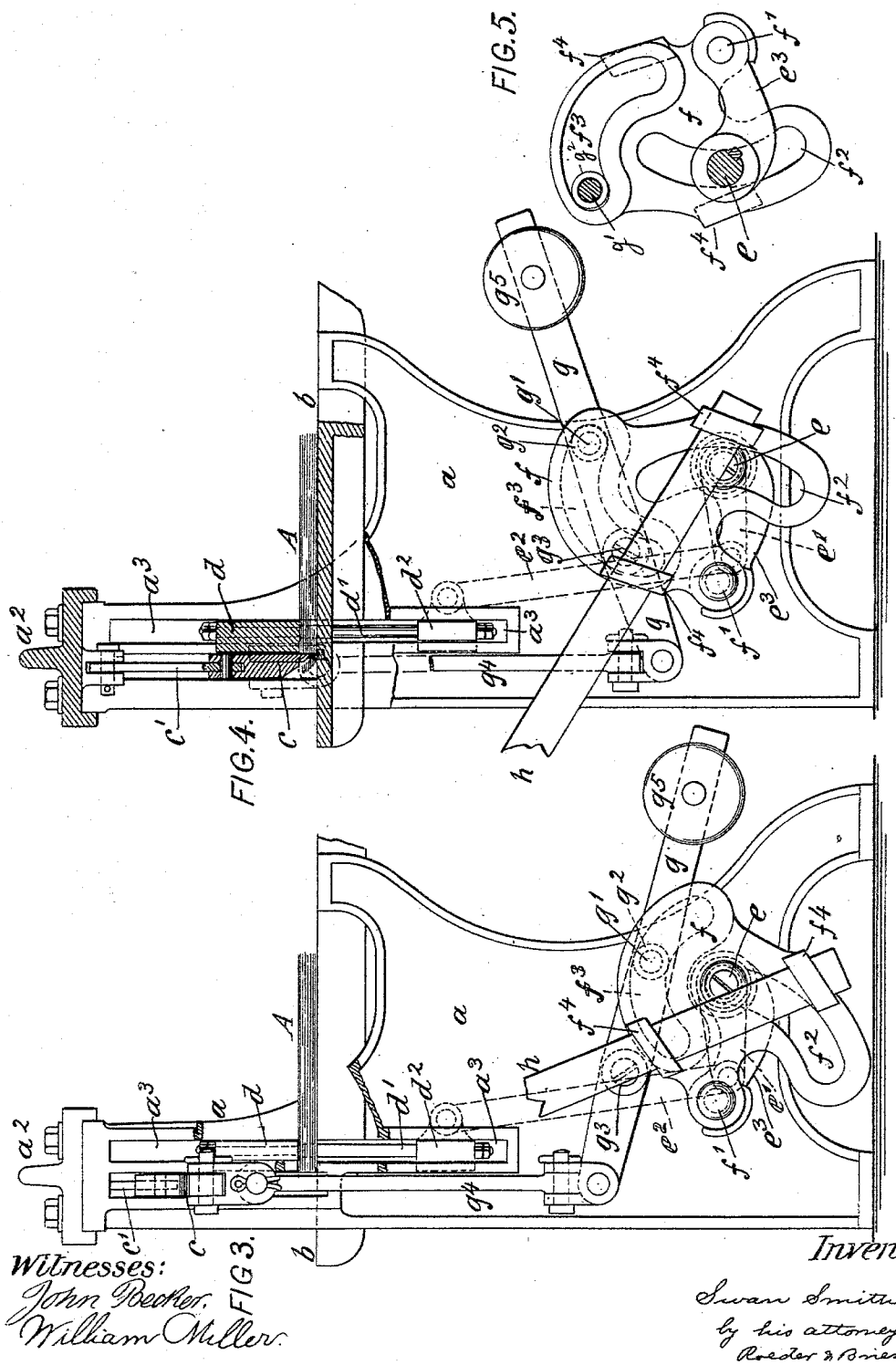
THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 2.

S. SMITH.

PAPER CUTTING MACHINE.

No. 602,882. Patented Apr. 26, 1898.



Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

3 Sheets—Sheet 3.

S. SMITH.

PAPER CUTTING MACHINE.

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FIG. 6.

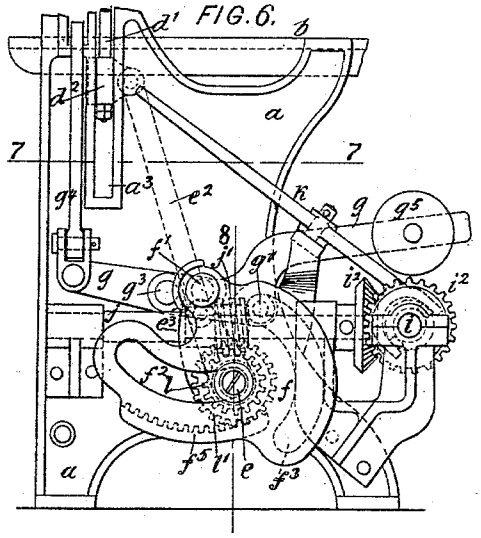


FIG. 9.

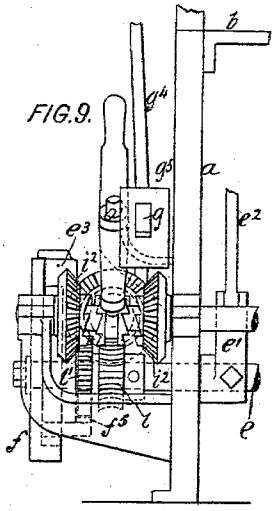


FIG. 7.

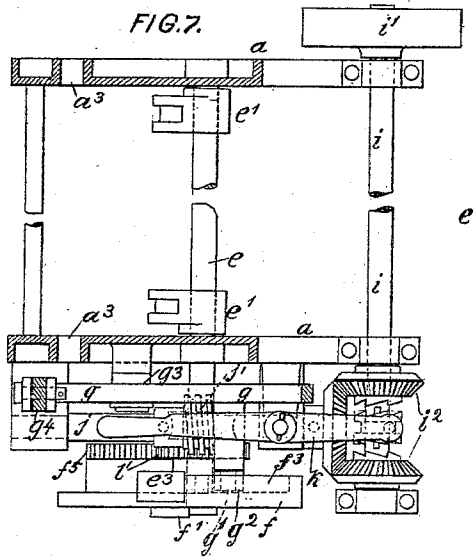
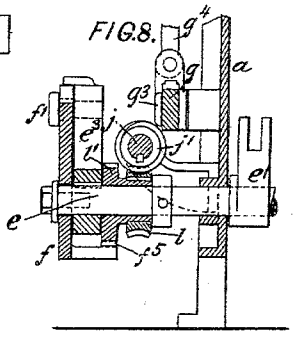


FIG. 8.



Witnesses:
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William Miller.

Inventor:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SWAN SMITH, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO GEORGE EVERSON AND JOSEPH W. MASTERS, OF SAME PLACE.

PAPER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 602,882, dated April 26, 1898.

Application filed July 14, 1897. Serial No. 644,572. (No model.)

To all whom it may concern:

Be it known that I, SWAN SMITH, a citizen of Sweden, and a resident of Brooklyn, county of Kings, and State of New York, have invented an Improved Paper-Cutting Machine, of which the following is a specification.

This invention relates to an improved paper-cutting machine, and more particularly to the means for compressing and holding the paper while the same is being cut. By my invention a clamp-plate is made to descend upon and compress the stock of paper, and then the knife is made to descend, both operations being effected by the same stroke of the power lever or shaft. The machine is so constructed that the clamp-plate will engage automatically piles of paper, &c., of different thicknesses, so that no adjustment or setting whatever is required for clamping and cutting through piles of greater or less height.

In the accompanying drawings, Figure 1 is a side elevation of a hand-power machine embodying my invention and showing the knife and clamp-plate raised. Fig. 2 is a front elevation of the same; Fig. 3, a side elevation, partly in section, showing the clamp-plate lowered and the knife raised; Fig. 4, a similar view showing both the clamp-plate and knife lowered; Fig. 5, an inner face view of the eccentric *f;* Fig. 6, a side elevation of the lower part of the machine, showing an adaptation to steam or other power; Fig. 7, a horizontal section on line 7 7, Fig. 6; Fig. 8, a vertical section on line 8 8, Fig. 6; and Fig. 9, a rear view of part of the machine, showing the shifting mechanism.

The letters *a* represent the standards of the machine, suitably connected at the top and bottom by rods a' and head a^2 and carrying the usual work-table *b*.

c is the knife or cutter, guided within upright slots of standards *a* and suspended from head a^2 by the pivoted links c'. One end of the knife projects beyond one of the standards *a*, Fig. 2, and is there connected to the power mechanism, hereinafter described, that imparts the usual slanting stroke to the same.

Back of the knife *c* there is guided in upright grooves or ways a^3 of the standards *a* a vertically-movable clamp-plate *d*, having at each end a depending arm d', projecting through an opening of the work-table. These arms serve to connect the clamp-plate to the same power mechanism that actuates the knife and which will now be described.

e is a rock-shaft hung in standards *a* and projecting at one end beyond one of such standards. This rock-shaft is by crank-arms e' and links e^2 connected to the arms d' of the clamp-plate *d* by means of sliding cross-head d^3, so as to impart reciprocating motion to the clamp-plate.

The protruding end of shaft *e* carries a crank-arm e^3, to the free end of which there is pivoted at f' an eccentric *f*. This eccentric has a curved slot f^2 concentric to pin f' and embracing the outermost end of shaft *e*, which thus serves as a guide for the eccentric. On its inner face the eccentric *f* has a groove f^3 concentric to shaft *e*, Fig. 5, and engaged by a friction-collar g^2, turning on a pin g', that projects outwardly from a lever *g*. This lever is pivoted to standard *a* at g^3 and is connected at one end to the knife *c* by a link g^4, while its opposite or free end carries a counterbalancing-weight g^5. A pair of eyes f^4 of eccentric *f* are engaged by a hand-power lever *h*, weighted at its upper end, as at h', such weight having for its object to hold the clamp-plate *d* normally in its raised position.

The operation of the machine is as follows: The hand-lever *h* being normally in its right-hand position, both the knife *c* and clamp-plate *d* are raised, Fig. 1, and the stock of paper, &c., A to be cut is placed in proper position upon the table *b*. The lever being now swung to the left will during the first part of its stroke, by means of eccentric *f* and arm e^3, cause the shaft *e* to be rocked forward, so that it will by arms e' and links e^2 draw the clamp-plate *d* down, so that the latter bears upon the stock, Fig. 3. During this part of the motion the cam-groove f^3 will travel over the collar g^2 without taking the pin g' along, and thus no motion is imparted to the knife. As soon, however, as the clamp-plate *d* has found a bearing on the stock A the rotation of shaft *e* will be arrested, and consequently the continued motion of hand-lever *h* will cause the eccentric *f* to tilt on its pivot f'. This tilting motion will cause the cam-groove f^3 to actuate the pin g' and to

thus tilt the lever g, so that the latter will by its link g^4 draw the knife c downward to effect the cut, Fig. 4. The reverse motion of lever h will cause first the clamp-plate d and then the knife c to be raised.

In Figs. 6 to 9 the machine is shown to be adapted to steam, electric, or other power in lieu of being driven by hand. Here I use an additional power-shaft i, driven from pulley i' and adapted to impart motion in alternate directions to a worm-shaft j by bevel-gear i^2 and clutch-lever k, that is reciprocated by hand to engage alternately the opposite clutches.

The worm j' of shaft j engages a worm-wheel l, turning on shaft e and connected to a pinion l'. This pinion engages a rack f^5 of the eccentric f, previously described, so that such rack receives from the power-shaft the reciprocating motion required for operating the clamp-plate d and knife c.

Of course this machine may also be used for cutting cloth and other substances.

What I claim is—

1. In a paper-cutting machine the combination of a clamp-plate with a rock-shaft connected thereto, and having a crank-arm, an eccentric pivoted thereto, a lever engaging the eccentric, and a knife connected to the lever, substantially as specified.

2. In a paper-cutting machine the combination of a clamp-plate with a rock-shaft connected thereto, and having a crank-arm, a slotted eccentric pivoted thereto and guided upon the rock-shaft, a lever having a pin that engages the eccentric, and a knife connected to the lever, substantially as specified.

SWAN SMITH.

Witnesses:
J. W. MASTERS,
F. v. BRIESEN,