(No Model.)

# T. F. McCOY.

## KNIFE FOR PAPER CUTTING MACHINES.

No. 596,530. Patented Jan. 4, 1898.

FIG. 3.

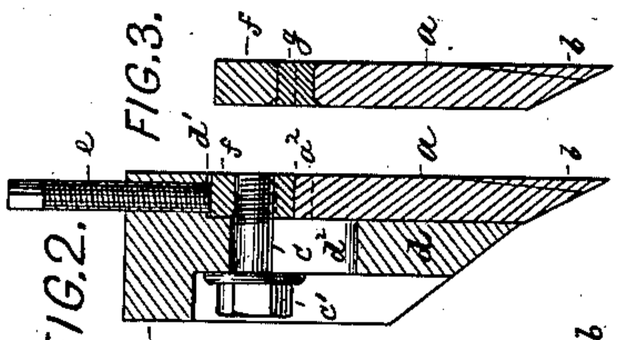



FIG. 2.

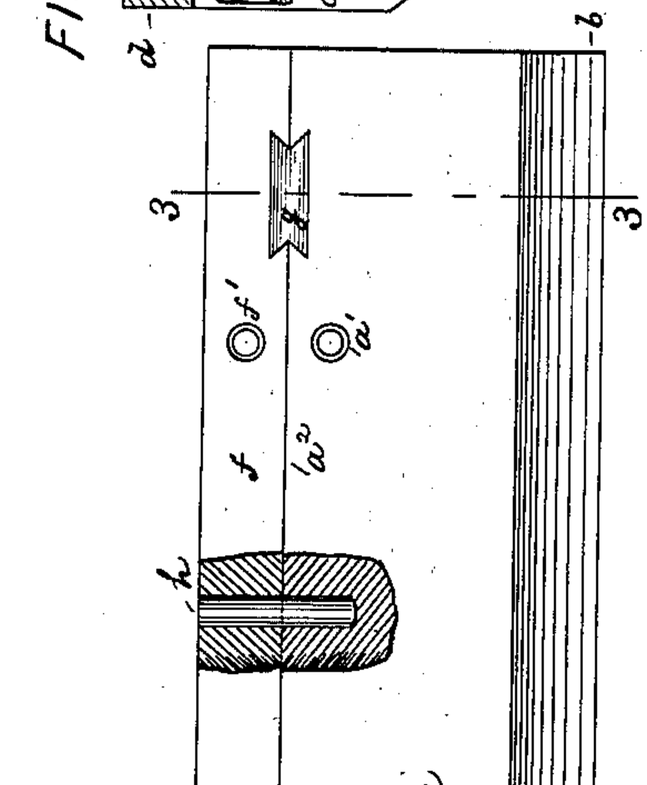



FIG. 1.

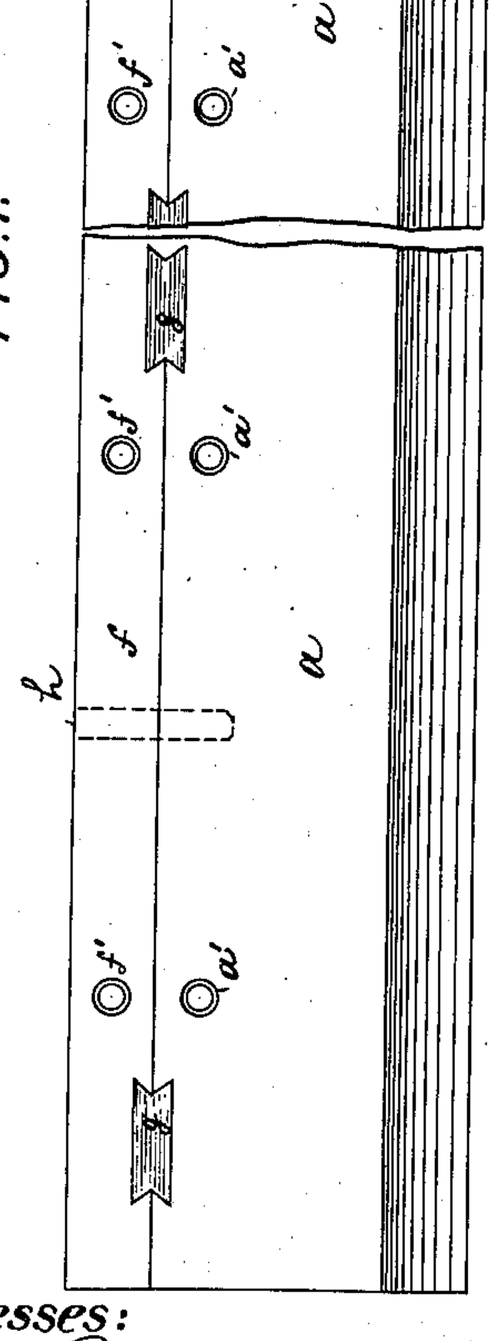



FIG. 5.

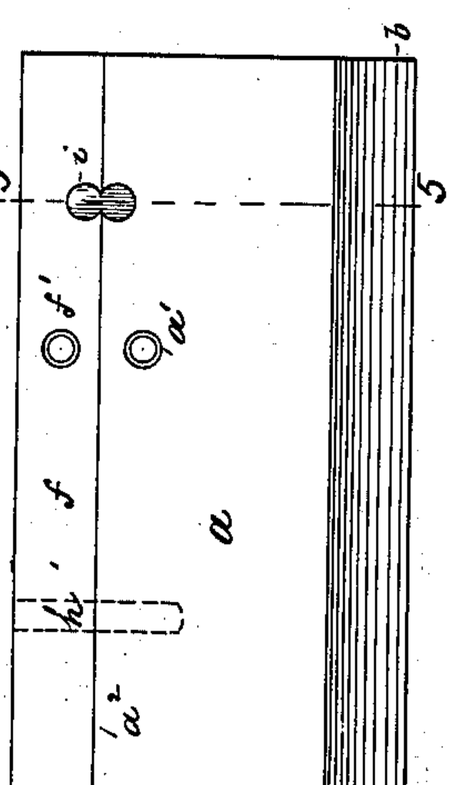



FIG. 4.

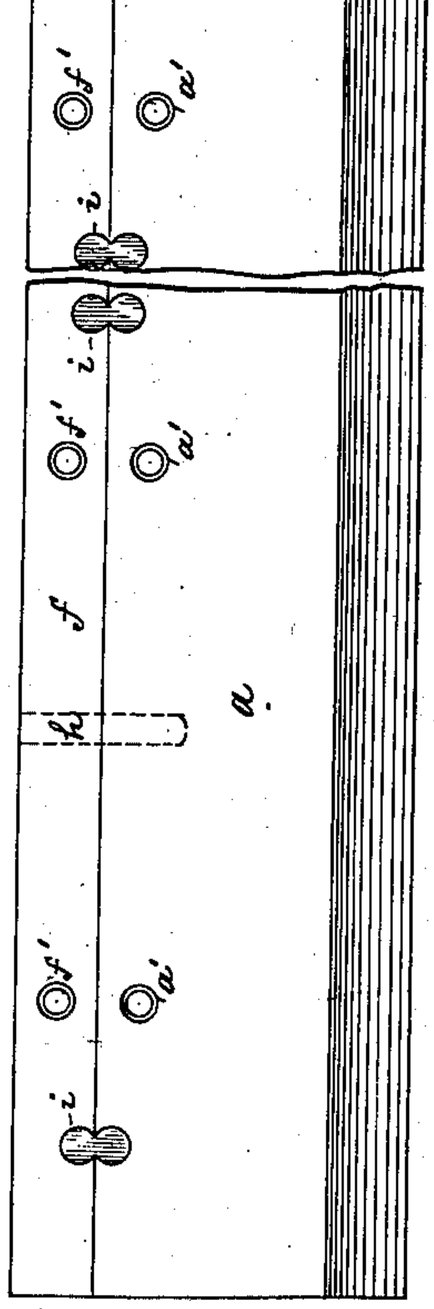



FIG. 7.

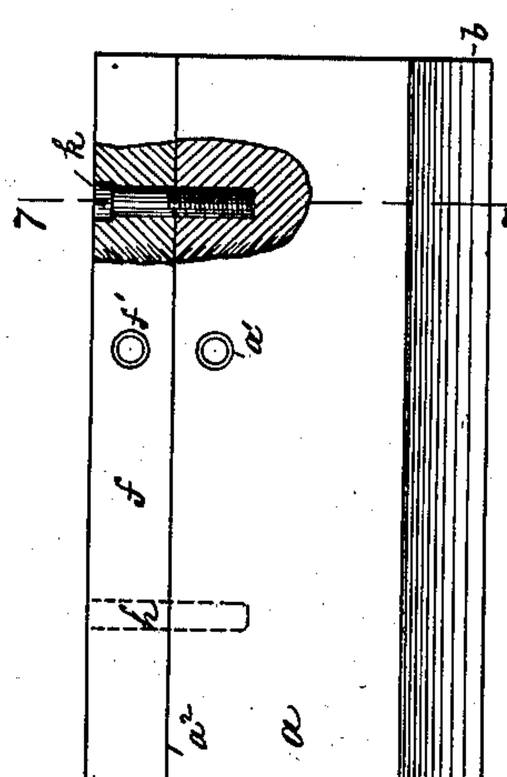
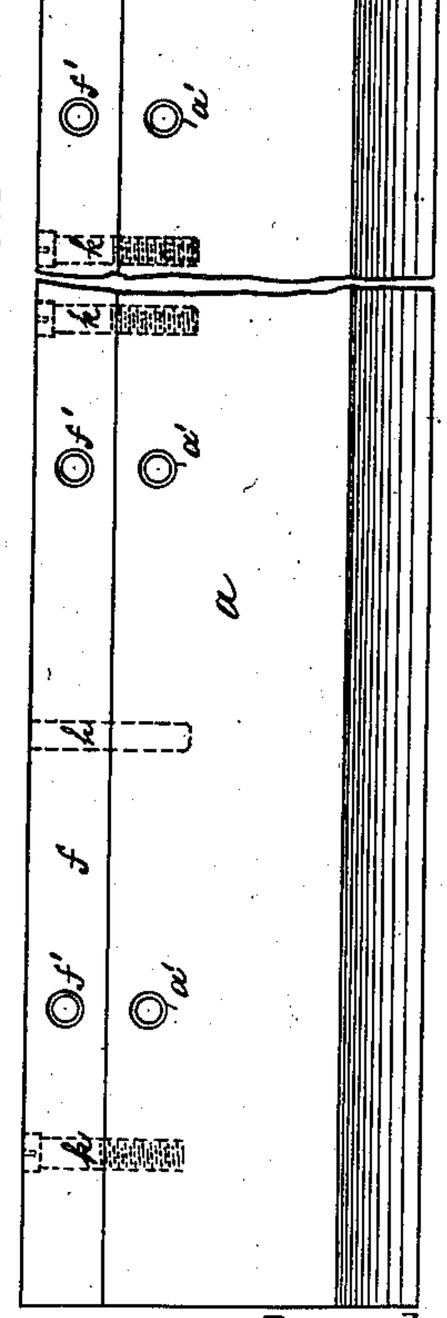



FIG. 6.

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# UNITED STATES PATENT OFFICE.

THOMAS F. McCOY, OF NEW YORK, N. Y.

## KNIFE FOR PAPER-CUTTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 596,530, dated January 4, 1898.

Application filed May 5, 1897. Serial No. 635,119. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS F. McCOY, of New York city, county and State of New York, have invented an Improved Knife for Paper-Cutting Machines, of which the following is a specification.

This invention relates to an improvement in knives for paper-cutting machines, and has for its object to provide means for rendering knives again serviceable after being worn. These knives have a limited vertical adjustment along the knife-bars, and after the cutting edge has been worn substantially to the length of this adjustment the knives were heretofore rendered useless. I propose to provide the knife when worn with an additional back, which permits its further adjustment and thereby greatly increases the length of its life.

In the accompanying drawings, Figure 1 is a face view, partly in section, of my improved knife; Fig. 2, a cross-section thereof, showing it attached to the knife-bar; Fig. 3, a cross-section on line 3 3, Fig. 1; Fig. 4, a face view of a modification of the knife; Fig. 5, a cross-section on line 5 5, Fig. 4; Fig. 6, a face view of a further modification of the knife; and Fig. 7, a cross-section on line 7 7, Fig. 6.

The letter *a* represents the usual wrought-iron body or blade of a knife for paper-cutting machines, being a long flat bar having a beveled edge, to the back of which the steel cutting edge *b* is welded. The blade *a* is provided at suitable intervals with transverse perforations *a'*, adapted for the reception of fastening-screws *c*, having nuts *c'*, and by which the knife is attached to the knife-bar *d*. This knife-bar is provided with an offset *d'* above the blade and with set-screws *e*, passing through the offset, by means of which the blade is rendered vertically adjustable to a limited extent. The fastening-screws *c* pass through upright slots $d^2$ of the knife-bar, so that such screws may follow the adjustment of the blade. To lower the blade, the nuts *c'* are loosened, the screws *e* turned down, and the nuts *c'* again tightened up. When the screws *c* have reached the lower extremities of slots $d^2$, further adjustment of the knife ceases, and knives worn to require further lowering were rendered useless.

In order to permit the knives when so worn to be again rendered useful, I attach to the upper or blunt edge $a^2$ a back *f*, which is a long narrow strip of metal of the same thickness as the thickness of the blade. The back *f* is preferably secured to the blade by means of the keys, plugs, or dovetail wedges *g*. (Illustrated in Figs. 1 and 3.) Here the blade *a* and back *f* are provided at their contiguous edges with dovetail recesses opening into one another and adapted for the reception of the keys or plugs. These keys are preferably cast into the recesses, and when set will effectively connect the parts. To procure a better finish, it is desirable that the front and back of the keys be countersunk, as illustrated in Fig. 3.

I prefer to arrange between the keys *g* a number of dowel-pins *h*, that pass longitudinally through back *f* and into the upper or blunt edge of the blade *a*. As the knives in paper-cutting machines have a slanting downward motion, it is of importance that the connection between back and knife be such as to effectively resist the shearing strain thereby produced. This result is accomplished to a satisfactory extent by the combined use of the keys *g* and dowel-pins *h*, the keys effecting a firm connection, while the dowel-pins serve to assist in taking up the shearing strain.

The back *f* should be provided with perforations *f'* in alinement with the perforations *a'*, the distance between the perforations *f'* and upper edge of back *f* being preferably equal to the distance between perforations *a'* and back $a^2$. After the back has been fitted to the knife the screws *e* are again turned up, so that the back rests against the offset *d'*, Fig. 2, and in this way the knife may be used up to an additional length equal to the height of the back. Thus the life of the knife is prolonged to a considerable extent, and the steel cutting edge *b* may be used up to near its upper terminal.

In Figs. 4 and 5 the connecting-keys are made in the form of centrally-contracted elliptical plugs *i* in lieu of being made of the angular form shown in Figs. 1 to 3.

In Figs. 6 and 7 the wedge-shaped keys are replaced by screws *k*, that pass longitudinally through the back and engage tapped openings in the blade.

What I claim is—

1. A knife for paper-cutting machines, composed of a perforated blade, a back perforated in alinement with the blade, and means for connecting the back with the blunt edge of the blade, substantially as specified.

2. A knife for paper-cutting machines, composed of a recessed blade, a recessed back, and wedge-shaped plugs that engage the recesses and connect said back to the blunt edge of the blade, substantially as specified.

3. A knife for paper-cutting machines, composed of a recessed blade, a recessed back, connecting-plugs engaging the same, and dowel-pins that pass longitudinally through the back and into the blunt edge of the blade, substantially as specified.

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