

(No Model.)

W. R. FOX.
MITER CUTTER.

No. 483,436.

Patented Sept. 27, 1892.

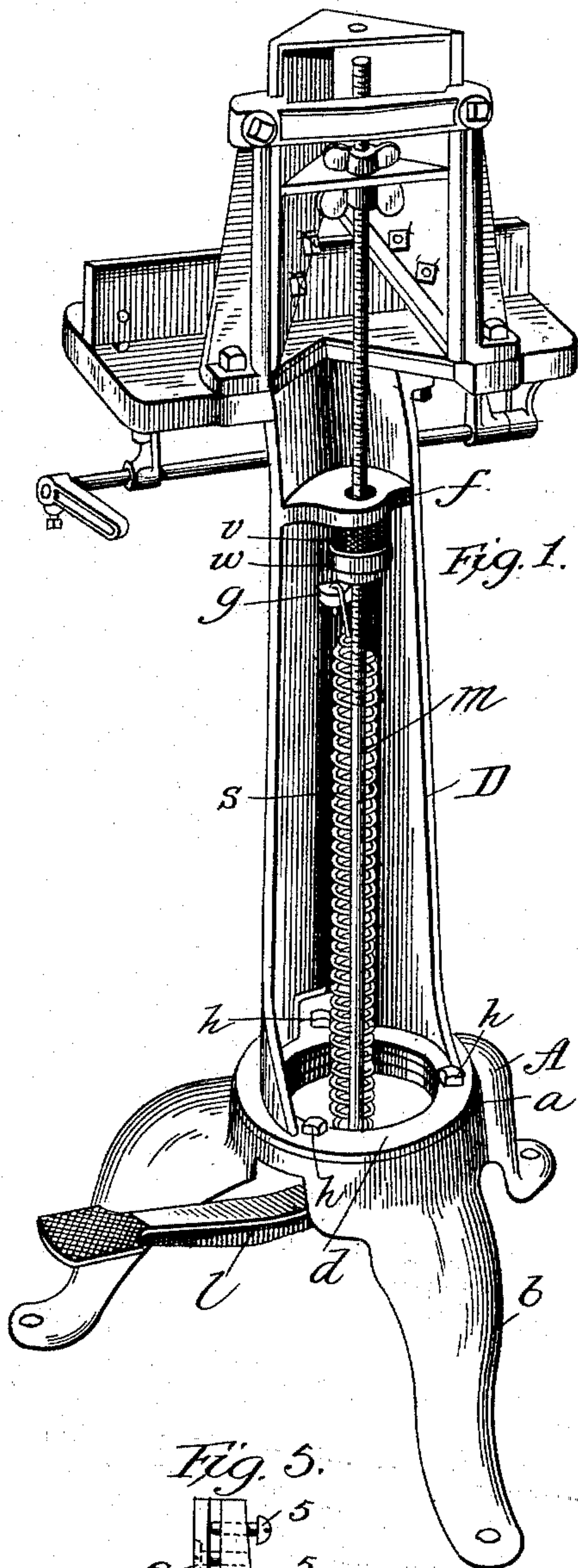


Fig. 1.

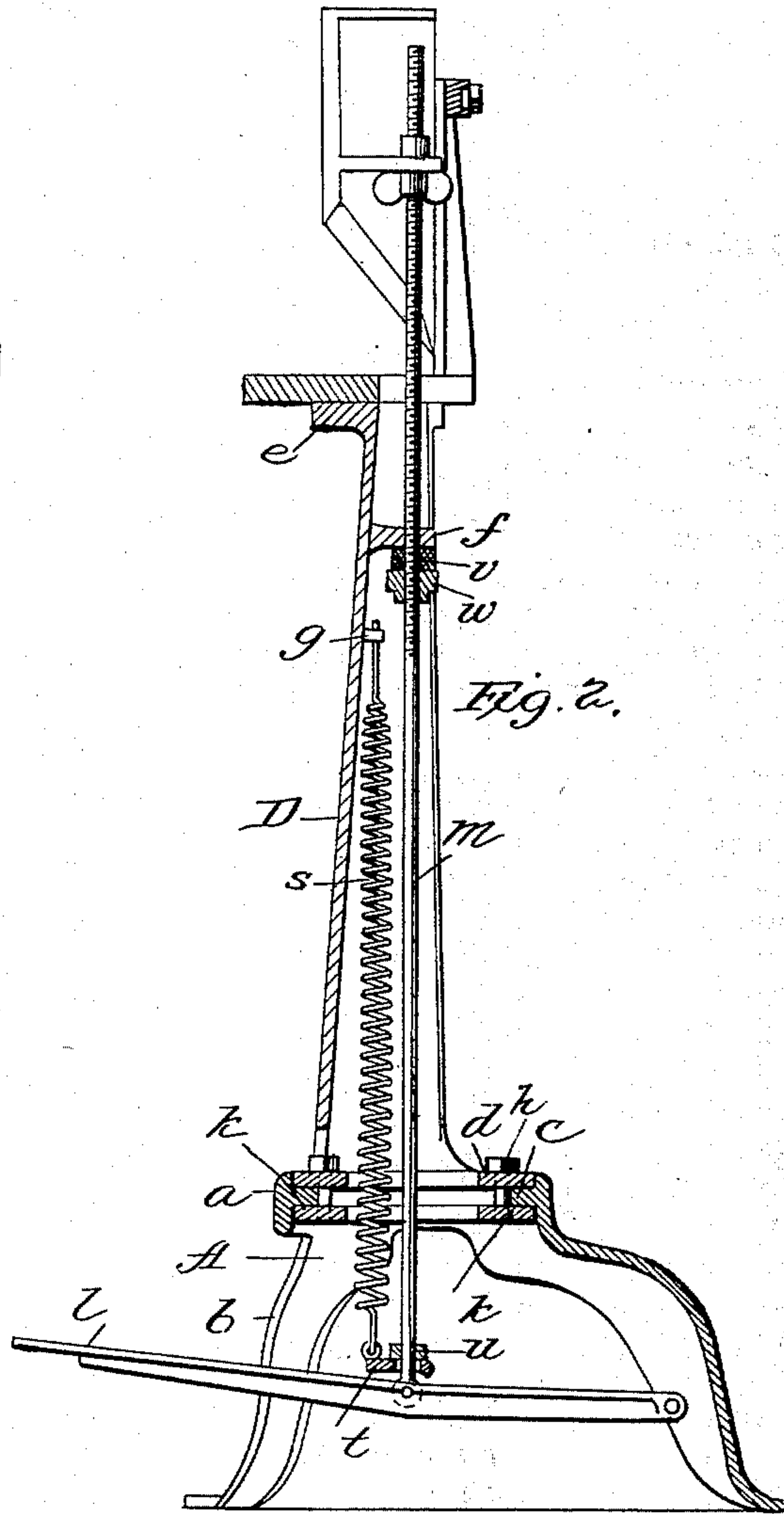


Fig. 2.

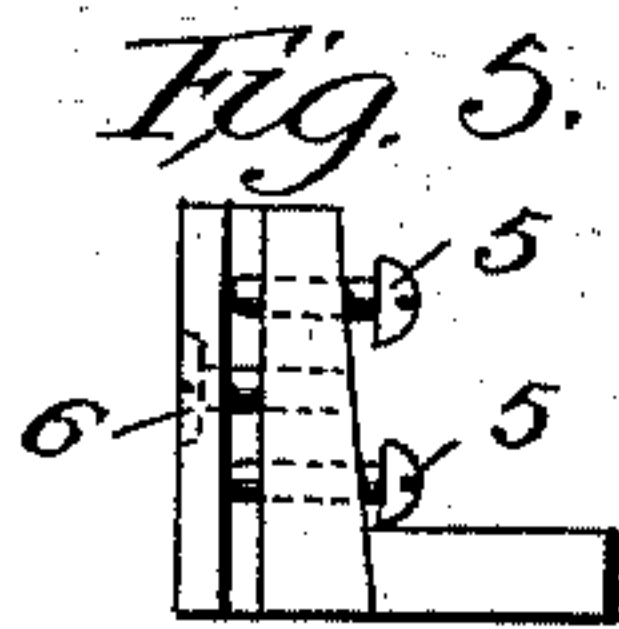


Fig. 5.

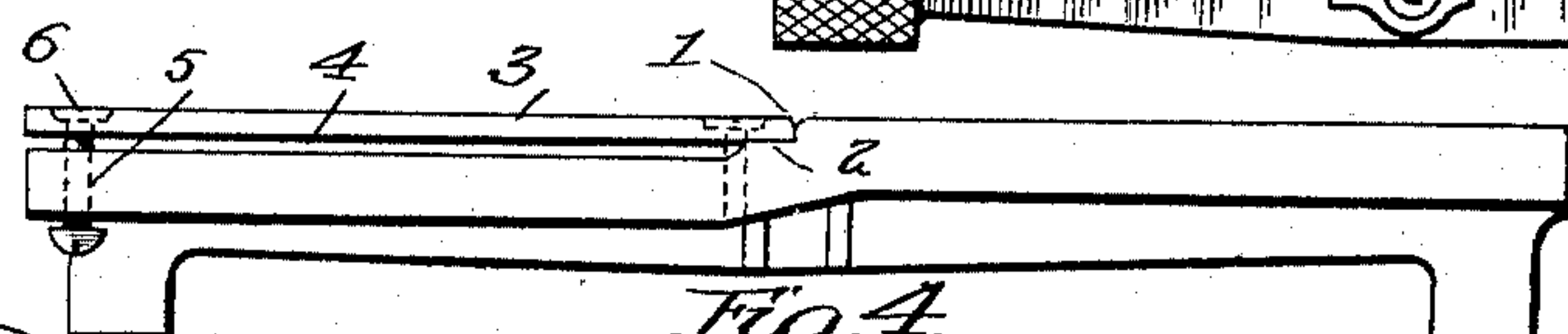


Fig. 4.

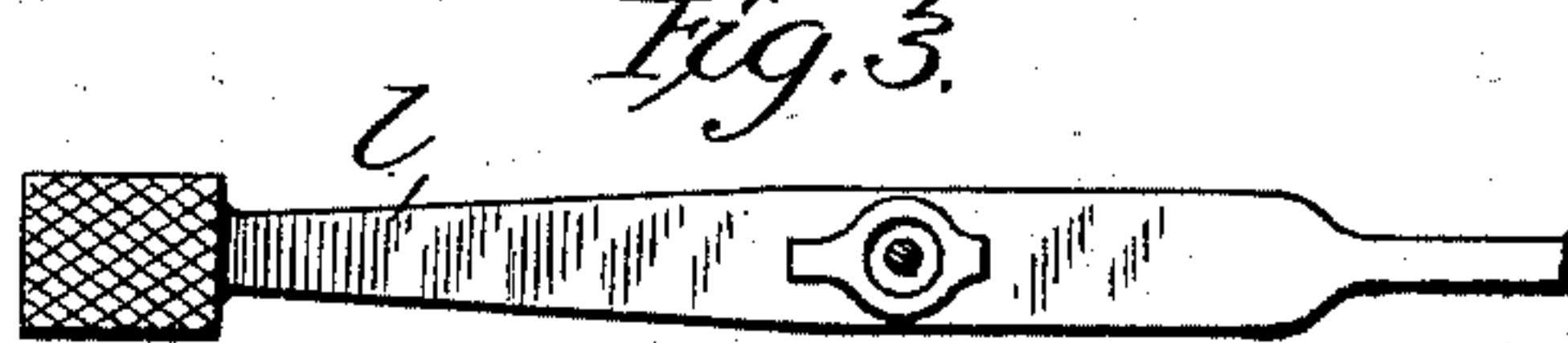


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM R. FOX, OF GRAND RAPIDS, MICHIGAN.

MITER-CUTTER.

SPECIFICATION forming part of Letters Patent No. 483,436, dated September 27, 1892.

Application filed November 18, 1891. Serial No. 412,311. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. FOX, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Miter-Cutters, of which the following is a specification.

My invention hereinafter described is an improvement in mitering-machines, a part of it relating to a special form of support for mitering-machines and a part relating to the gage therefor.

The first part of the invention includes a swivel or rotating mitering-machine in which the upper part, carrying the mitering mechanism, is swiveled upon the base in which the treadle or other mechanism is mounted and by which the cutter is operated.

My said invention is shown in the accompanying drawings, in which—

Figure 1 shows a perspective view of the machine. Fig. 2 represents a vertical section of the machine. Fig. 3 is a plan view of the treadle. Fig. 4 shows a plan or face view of the gage. Fig. 5 is an end view of Fig. 4.

In the drawings, A represents the base upon which the machine is supported. It consists of a casting having annular rim *a* and legs *b*, these being of any convenient shape. The rim has an interior horizontal flange *c*. Upon the upper part of this flange rests an annular base *d* of the hollow column D, the upper part of which has a horizontal annular flange which supports the bed and upper works of the mitering-machine. Near the upper end of this column is a diaphragm *f* and an interior stud *g*. The column is mounted upon the base with its lower annular end resting upon the flange *c* within the rim *a*, and it is held there-
to by means of bolts *h*, which pass through the flange *d* and inside of the flange *c* and are held in a ring *k* underneath the flange *c*, the construction being such that the column D is securely held in place, but it is permitted to turn on the base and can be securely clamped by tightening one or more of the screws. Upon one of the legs of the base is pivoted the treadle *l*, the free end of which extends outwardly into convenient position for use by the operator. Within the hollow column is a central vertical rod *m*, the lower

end of which is pivoted to the treadle. The upper end passes through a hole in the broad lug or diaphragm *f* and is connected to the carriage of the cutter. The upper part of the rod is threaded, and it is held to the cutter-carriage by a nut above and below. The treadle and the cutter-carriage are kept normally raised by means of a spring *s*, attached above to the lug *g* and at the lower end to a swivel *t*, which surrounds the rod underneath the collar *u*. The upward motion of the rod *m* is limited by a vertically-adjustable buffer *v* upon the nut *w*, and when the rod and cutter are drawn up by the spring the buffer bears against the under surface of the lug *f*. When the machine is used to cut narrow material, the buffer may be set up so as to permit the cutter to rise a lesser distance, and thus is avoided unnecessary movement of the treadle and the foot. A similar buffer might be placed above the perforated lug to limit the downward movement; but this would be of less importance.

In putting up machines of this class in which the knife makes an angular cut to the face of the gage it is difficult to make the knife cut at the same angle in different kinds of wood. In some stock the wood will draw the knife more and cut the molding more open at the heel, and in other kinds of wood less. In order to overcome this difficulty and to provide an adjustment which will compensate for this variation in cutting different kinds of wood and also to make it easy to put up a machine which will cut a perfect miter, I have provided an adjustable face for the gage either at one or both ends. In Figs. 4 and 5 I have shown it at one end only, and this I deem ordinarily sufficient. The face of the gage is reduced, as shown in Fig. 4, leaving a ledge at 2. On this I fix a supplemental face-plate 3, which rests on the ledge at 2, this being of a depth just sufficient to leave the face of the supplemental plate flush with the other face of the gage. The depth of the cut-away portion in the other part is greater than the depth of the plate, leaving an open recess 4. The inner end, which rests on the ledge, is fixed in place by screws or rivets, while the outer end is adjustable, being held up and resting upon set-screws 5 5, by adjustment of which the free

end of the supplemental plate may be set in or out. This free end is held down upon the set-screws by means of a screw 6, the head of which is flush with or below the face of the supplemental plate. By means of these screws the outer ends of the supplemental plate may be adjusted and held for the purpose heretofore explained.

In the center of the gage or on a line opposite the angle of the cutter I form a groove, preferably angular in cross-section, in which the angle of the cutter moves, thus allowing the edges to pass by the face of the gage.

I claim as my invention—

1. In a miter-cutting machine having a base, the means for reciprocating the knife-carriage connected with said base and a rotary top supporting the carriage and capable of being rotated upon the base, the said carriage rotating with the said top, whereby it may be adjusted to different positions about the axis of the top, substantially as described.

2. In combination, a base, a column capable of being turned on said base, a cutter-carriage mounted on said column and adjustable therewith, a rod connecting the carriage to the device for operating said carriage, a lug on said column, and an adjustable stop on the connecting-rod, arranged to bear on the lug, substantially as described.

3. In combination with the base having a treadle, the rotatable column and the top having the cutter-carriage, a rod connecting said carriage with the treadle, a swivel on the said rod, and connections between said swivel and

the column, arranged to raise the treadle, substantially as described.

4. The gage consisting of the body portion and the face-plate, said body portion having a shoulder 2 at or near its center and the reduced part 4, extending to the end of the gage to form a recess back of the face-plate, which is secured at one end to the shoulder 2 and extends across the reduced part 4, and the adjusting-screws to hold the outer end of the face-plate, substantially as described.

5. In combination with the base having a treadle, a column carrying a cutter, and connections between said treadle and cutter, the said column having an annular lower end bearing upon an annular flange on the base, and means for clamping the two together adjustably, whereby the column with the cutter may be adjusted to different axial positions, substantially as described.

6. In combination, the base, the column arranged to turn on the base, the top, the guides for the cutter, carried by the top and adjustable axially with the column, the axial rod connected to the treadle, pivoted to the base, and the cutter-carriage connected on its rear side with the axial rod, the said top extending from the column forward of the cutter and carriage, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM R. FOX.

Witnesses:

BESSIE JONES,
JOHN DUFFY.