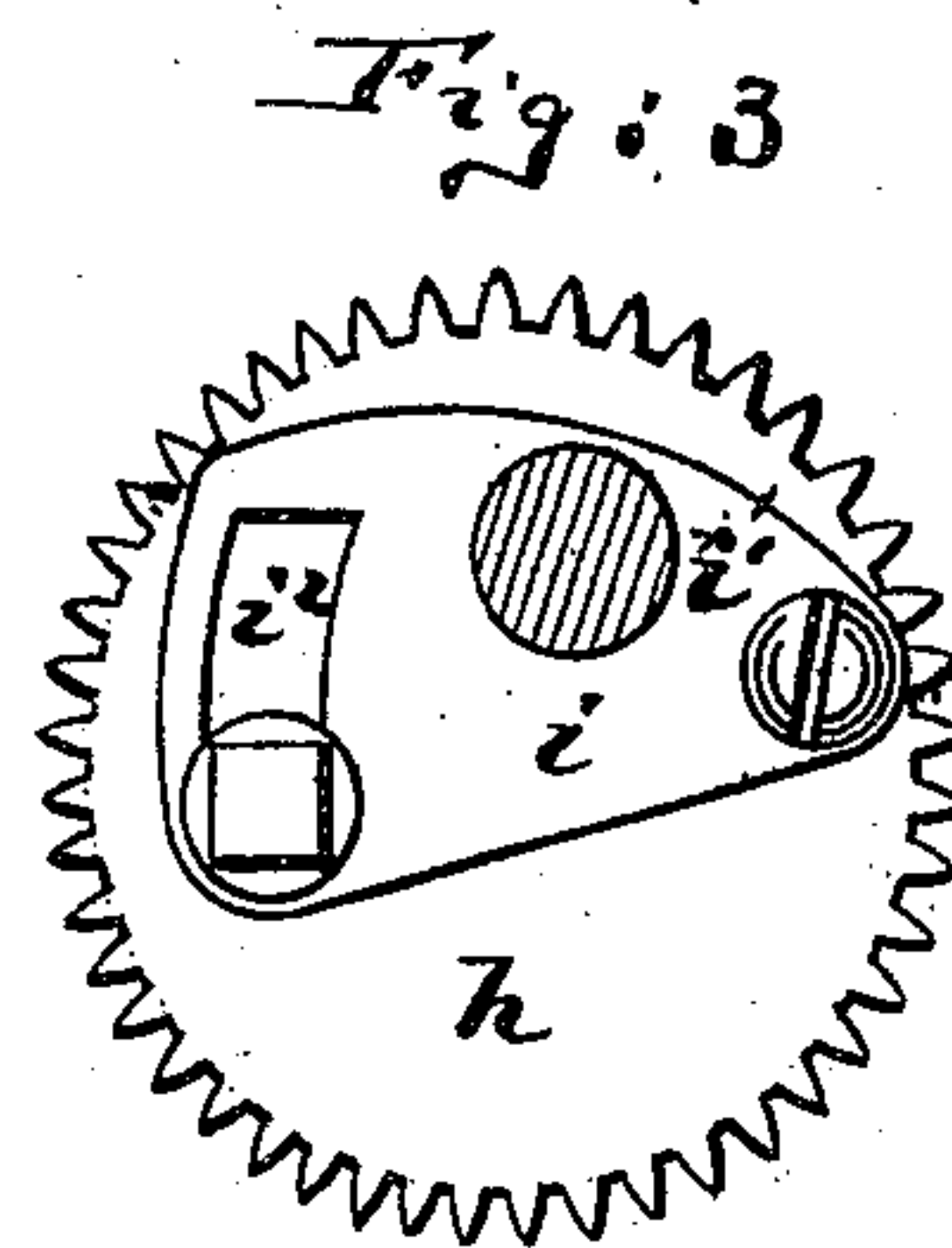
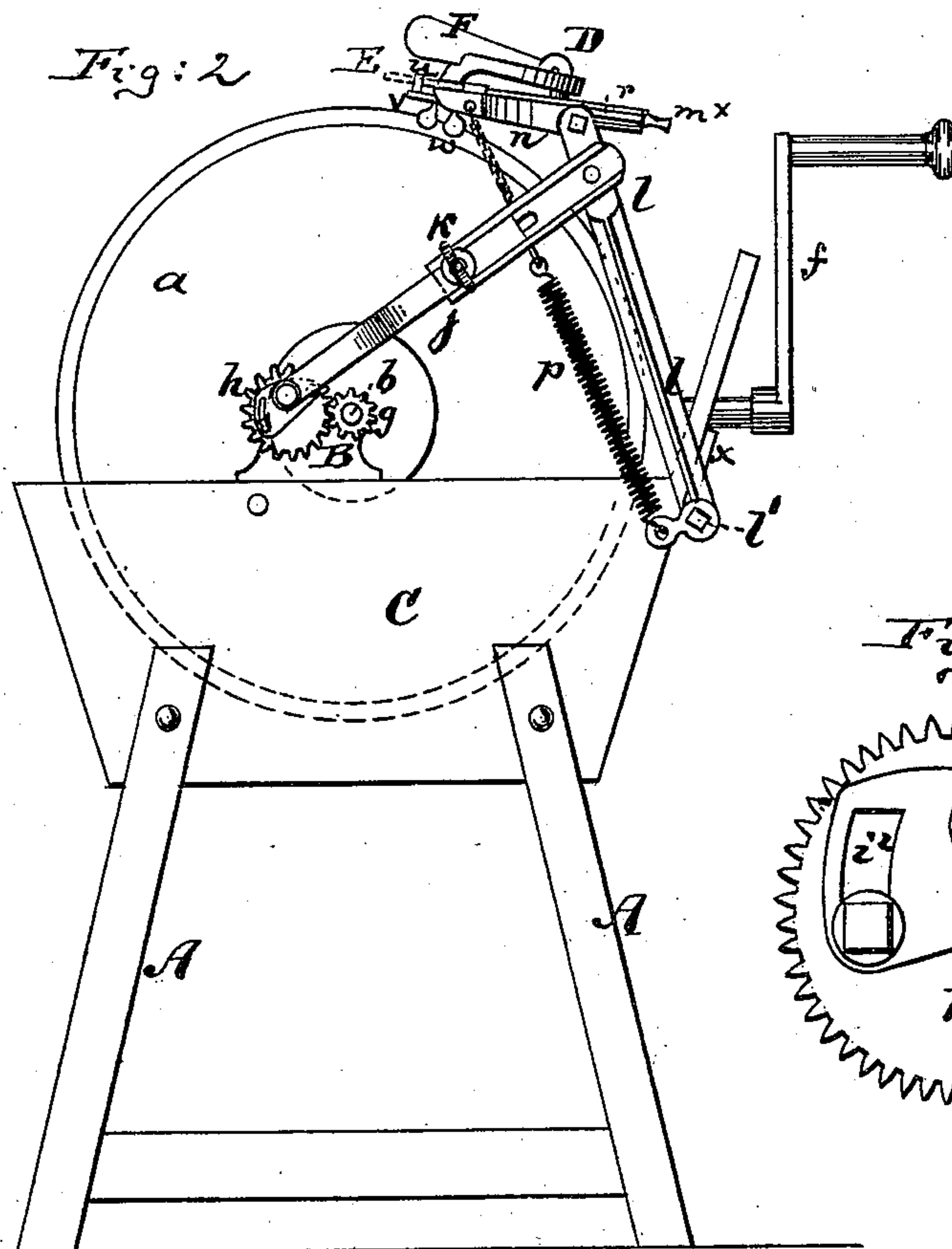
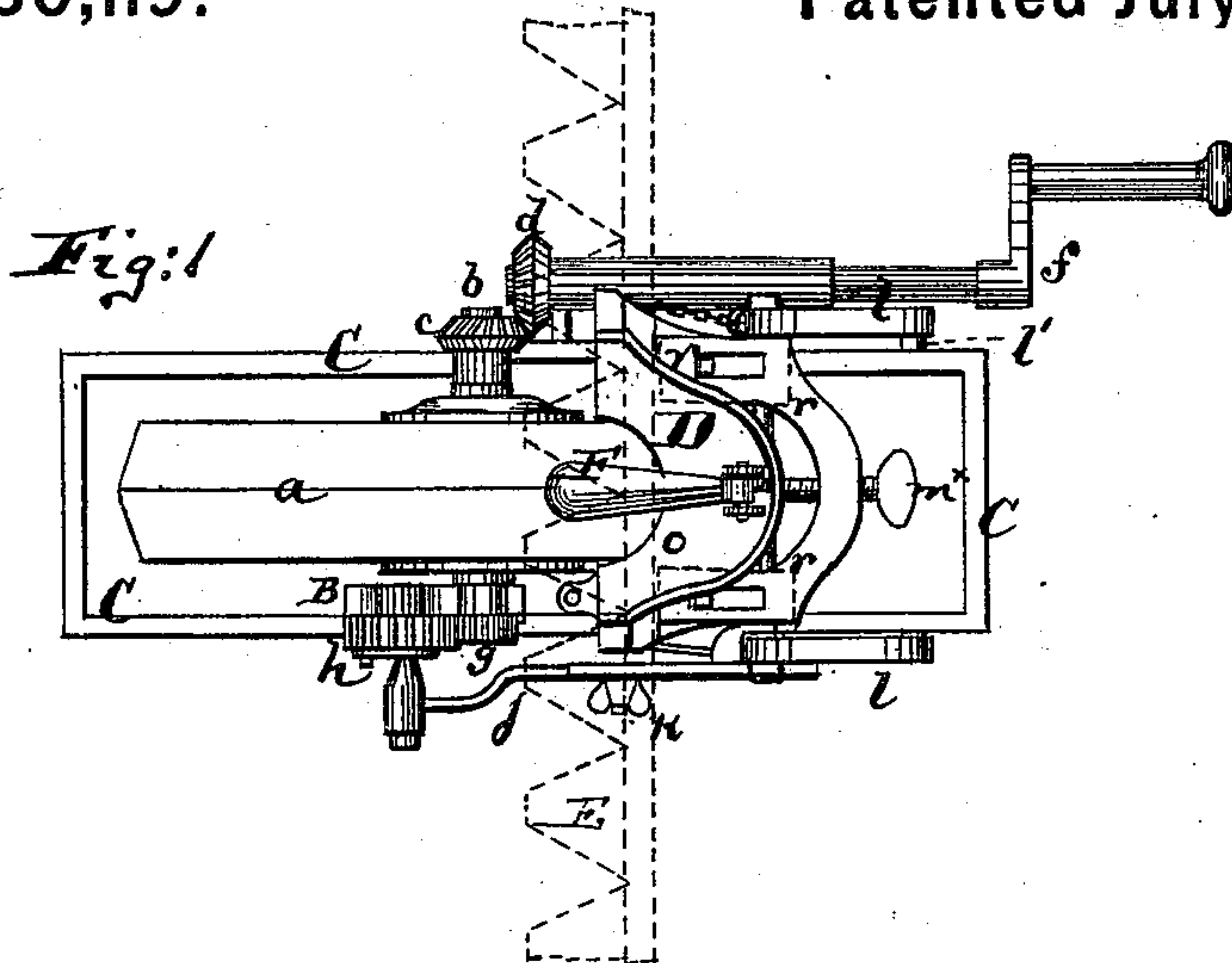


L. V. G. FOIS.

Machine for Grinding Mower and Reaper Knives.

No. 230,119.

Patented July 20, 1880.



Witnesses:

John C. Titmbridge  
Willy J. E. Schultz.

Inventor

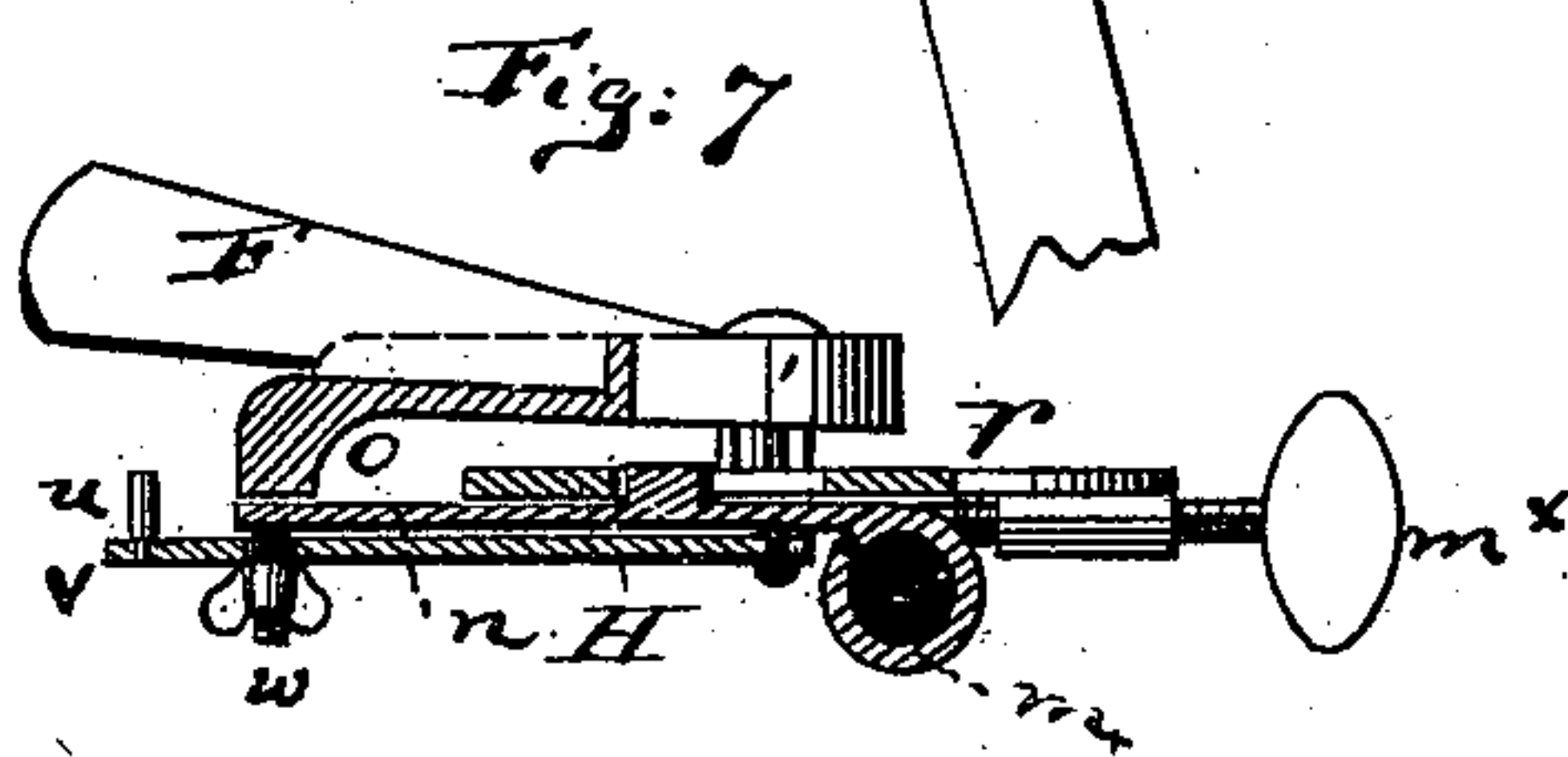
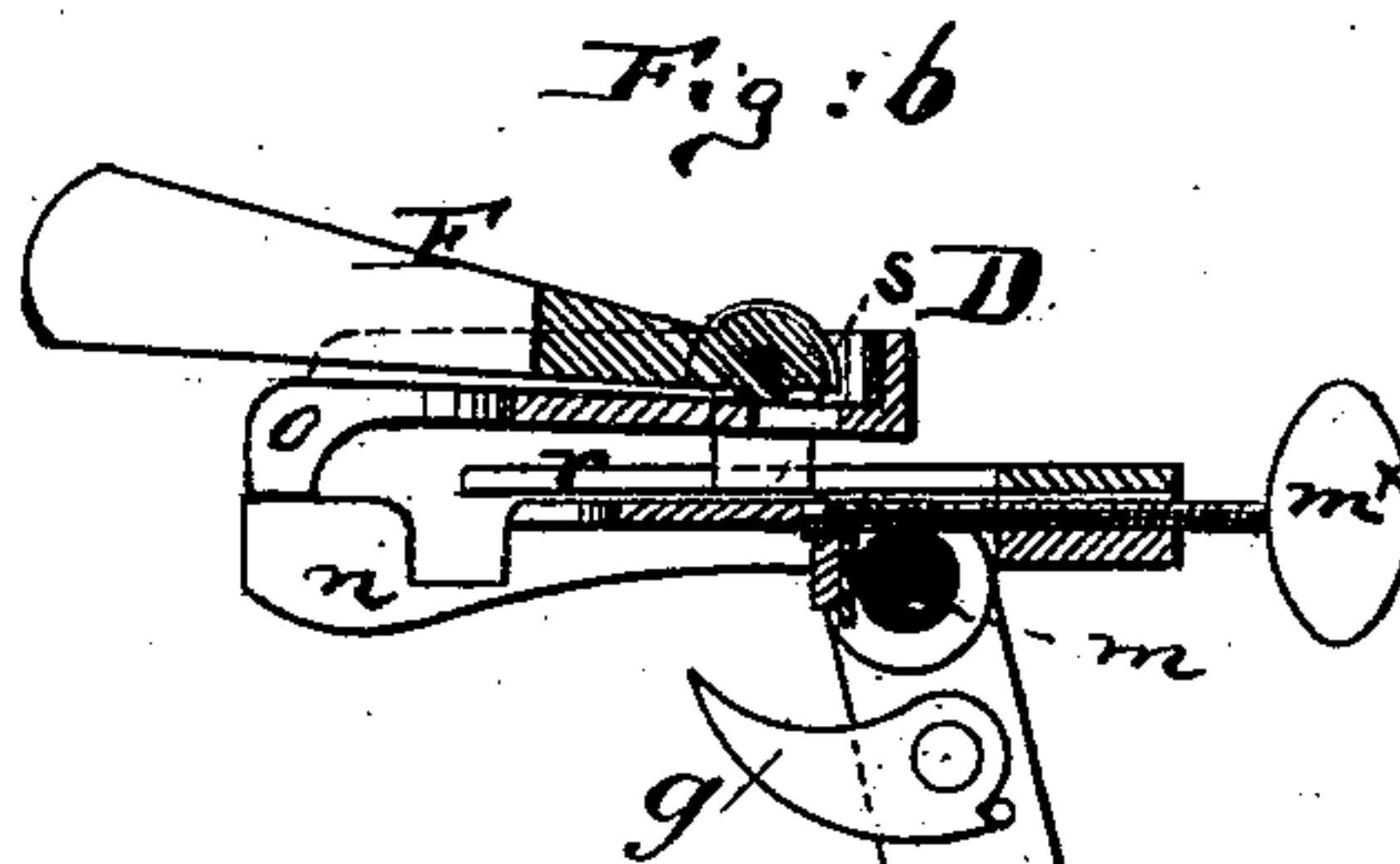
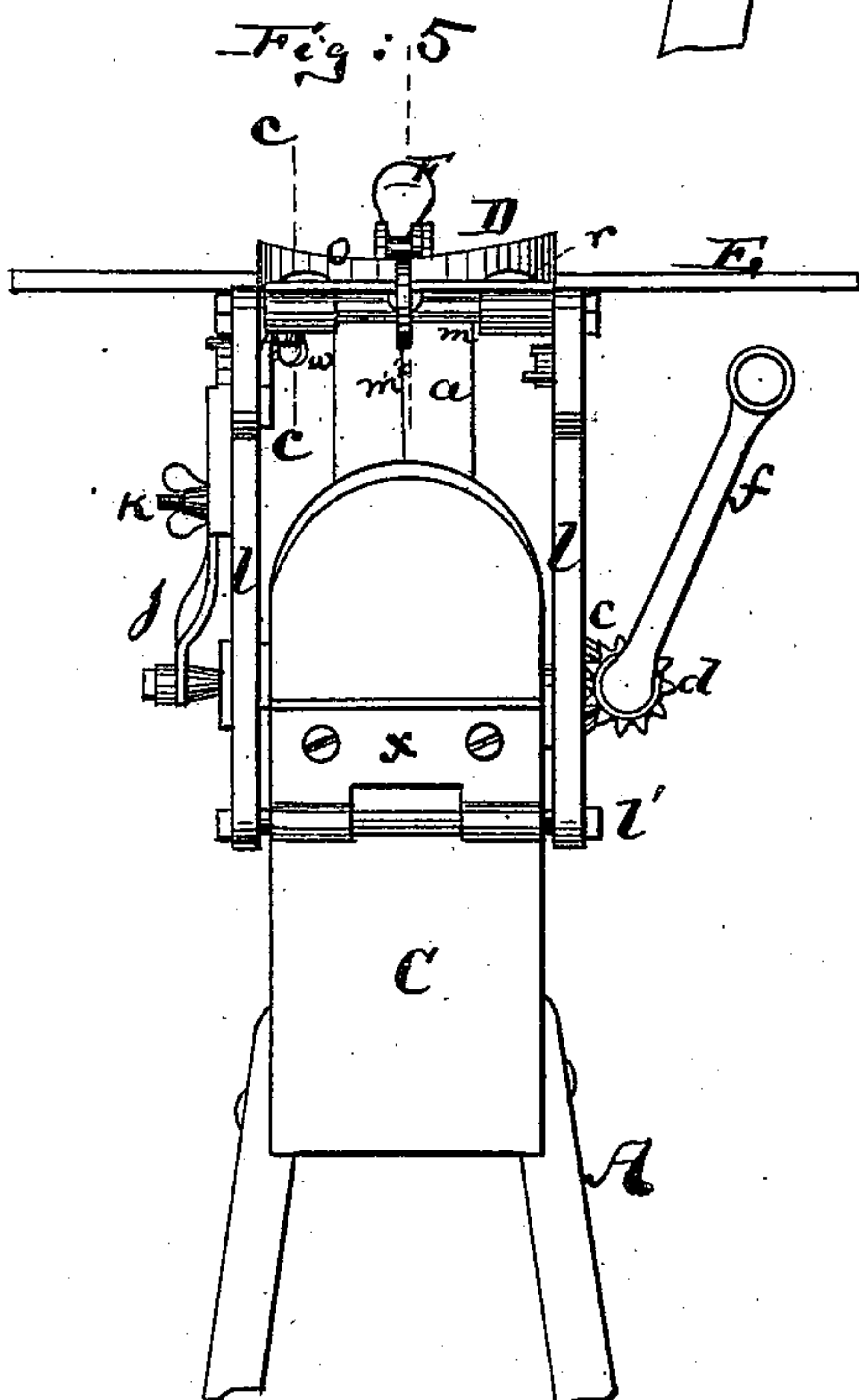
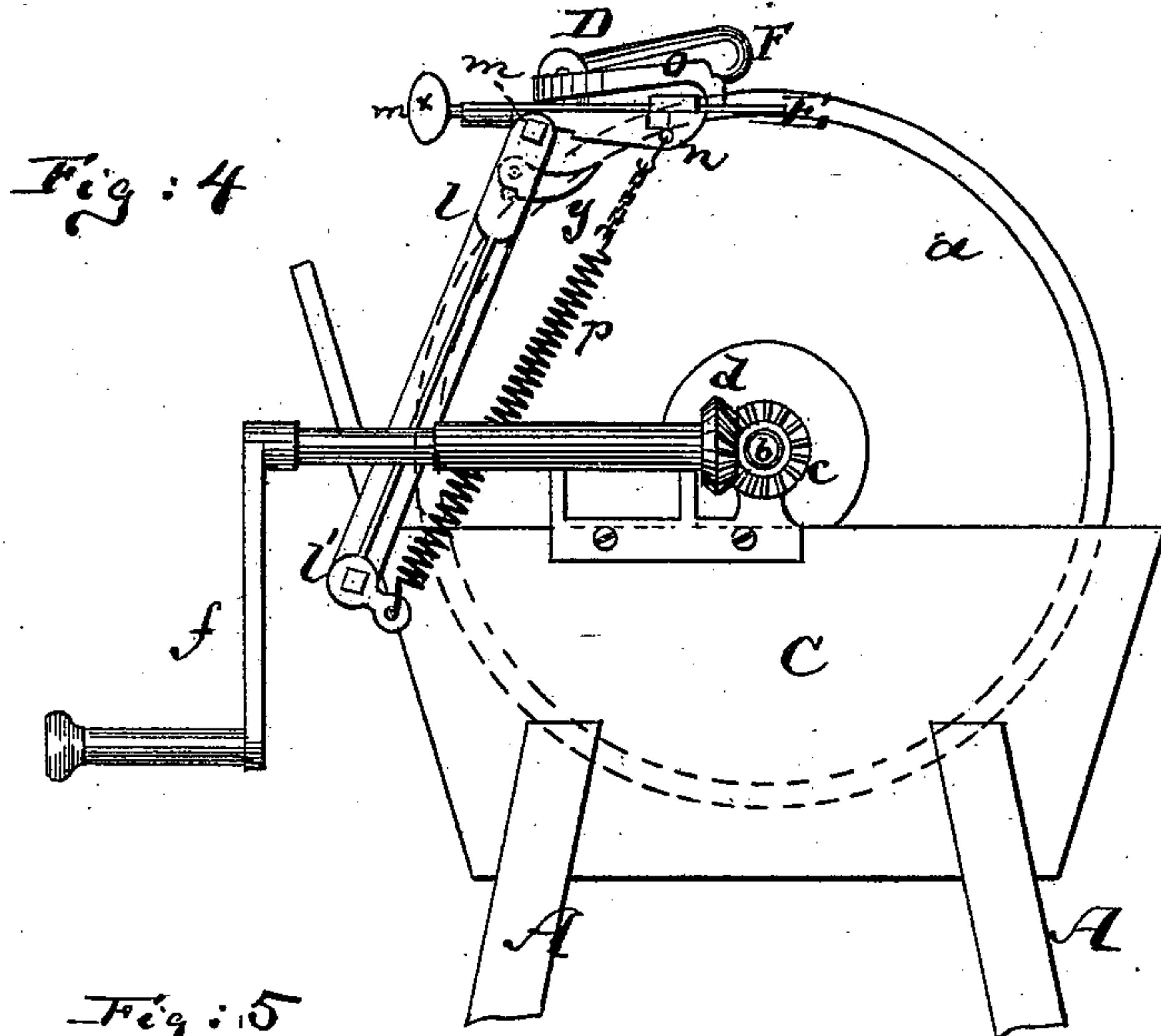
Leonard Valery Guedon Fois  
by his attorney  
A. B. Briesen

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# UNITED STATES PATENT OFFICE.

LEONARD VALERY GUEDON FOIS, OF AMIENS, FRANCE.

## MACHINE FOR GRINDING MOWER AND REAPER KNIVES.

SPECIFICATION forming part of Letters Patent No. 230,119, dated July 20, 1880.

Application filed February 26, 1880. Patented in France June 27, 1879.

*To all whom it may concern:*

Be it known that I, LEONARD VALERY GUEDON FOIS, of Amiens, France, have invented an Improved Machine for Sharpening the Cutters of Reaping and Mowing Machines, for which I have received French Patent No. 131,431, for fifteen years from June 27, 1879; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed sheets of drawings, making a part of the same.

This invention relates to an improved machine for sharpening the cutters of reaping and mowing machines.

The advantages of this improved machine are that it can be worked by one man and that it operates on two adjacent cutters at once, whereas the machines generally in use require two men to work them and act on only one edge of one cutter at a time.

In order that the invention may be more readily understood, I will describe it with reference to the annexed drawings, which represent the invention.

Figure 1 is a top view of the machine. Fig. 2 is a side elevation of the same. Fig. 3 is a detail face view of the pinion carrying the adjustable crank-pin giving to-and-fro motion to the vise or clamp in which the cutter-blade is held. Fig. 4 is a side elevation of the machine, taken from the opposite side to Fig. 2. Fig. 5 is an end elevation of the machine. Fig. 6 is a central vertical section through the clamp; Fig. 7, a vertical section of said clamp on the line *c c*, Fig. 5.

The same letters of reference indicate the same parts in all the figures.

*a* is a grindstone with V-shaped edge, and *b* the spindle carrying the grindstone, which spindle has its bearings in a suitable frame, *A*. One end of the spindle carries a bevel-pinion, *c*, that gears with another pinion, *d*, which is keyed on the shaft of the winch-handle *f*, for turning the grindstone. At the other end the spindle *b* carries a pinion, *g*, that gears with a larger pinion, *h*, turning on an axis mounted in a casting, *B*, fixed on the side of the trough *C*, or otherwise, in the supporting frame-work.

*i* is a plate, (see Fig. 3,) pivoted at one of its ends upon the face of pinion *h*, and fixed adjust-

ably by a binding-screw in a slot, *i*<sup>2</sup>, at the other end of the plate. This plate *i* carries a crank-pin, *i*<sup>1</sup>, to which a connecting-rod, *j*, is attached. The connecting-rod *j* is extensible or telescopic at *k*, and its other end is attached at a suitable point to the (preferably slotted) end of a lever, *l*, pivoted at *l*<sup>1</sup> to the trough.

By adjusting the plate *i* as above mentioned the radius of the crank-pin, and consequently the length of the oscillation of lever *l*, is increased or diminished. The lever *l* is double, there being one at each side of the trough, and the upper ends of these two levers are united by a transverse rod, *m*, which constitutes the pivotal support of a clamp or vise, *D*, in which the cutter-blade *E* is held.

*p* are spiral springs attached to the lower jaw, *n*, of the clamp or holder *D*, and to the lower ends of levers *l*, whereby the clamp is drawn down and the cutter-blade pressed against the stone.

*r* is a sliding plate in or on the under side of the clamp, which plate *r* is operated by an adjusting-screw, *m*<sup>x</sup>, to bear against the back of the cutter-bar and enable the cutters to project more or less from the jaws of the clamp, according to the depth of the cutters. The upper jaw, *o*, of the clamp is pressed down on the cutter-bar by an eccentric lever, *F*, that is hung in ears projecting from the lower jaw. By throwing the lever *F* back a hook, *s*, on said lever, coming under the jaw *o*, will raise the same and release the cutter-bar.

By the oscillation of the levers *l* imparted by plate *i* the clamp *D* and the blade *E* are moved back and forth in the direction of rotation of the stone, this movement being necessary in order that the stone may operate on the whole length of the cutter from the salient to its re-entering angle, and the amplitude of the movement necessarily varies with the depth of the cutters.

To shift the blade the clamp or holder is lifted or tilted upon its pivot *m* so as to raise the blade off the stone by oscillating the lever *F*, whose tail *s* comes against the under side of the jaw *o*, and thereby also unlocks the blade, which is then shifted sidewise, a pin, *u*, on a plate, *v*, that is pivoted to the under side of the clamp and held in suitable position by



a binding-screw, *w*, serving to regulate the lateral adjustment of the blade.

The levers *l* are attached at their lower ends to a plate, *x*, bolted to the end of the trough, so as to enable the cutter-holder to be lowered as the stone wears away.

Instead of the cam-lever *F* for closing the clamp *D*, a wing-nut may be used.

*y* is a pawl pivoted to one of the levers *l*, and serving to hold the clamp *D* and the blade off the stone while the blade is to be adjusted in the clamp. To this end the pawl *y* is swung up into a notch or against a shoulder provided for it on the under side of the clamp.

**I claim—**

1. In a machine for sharpening the cutters of reaping and mowing machines, the cutter holder or clamp *D*, consisting of two jaws, *n* and *o*, in combination with the locking and opening lever *F*, having toe *s*, substantially as specified.

2. In a machine for sharpening the cutters of reaping and mowing machines, the combi-

nation of the pivoted slotted plate *i*, carrying the crank-pin, with the extensible connecting-rods *j*, levers *l*, clamp *D*, and plate *x*, substantially as and for the purpose specified.

3. In a machine for sharpening the cutters of reaping and mowing machines, the combination of the springs *p* with the clamp *D*, levers *l*, rods *j*, and adjustable crank-pin *i'*, substantially as and for the purpose specified.

4. In a machine for sharpening the cutters of reaping and mowing machines, the combination, with the reciprocating cutter-holder *D* and with the levers *l*, springs *p*, rods *j*, and crank *i'*, of a slide, *r*, and means for moving said slide in the clamp, substantially as described.

5. The combination of the lever *l*, pawl *y*, and clamp *D*, substantially as and for the purpose specified.

LEONARD VALERY GUEDON FOIS.

Witnesses:

GEORGE H. SCIDMORE,  
EUGENE HÉBERT.