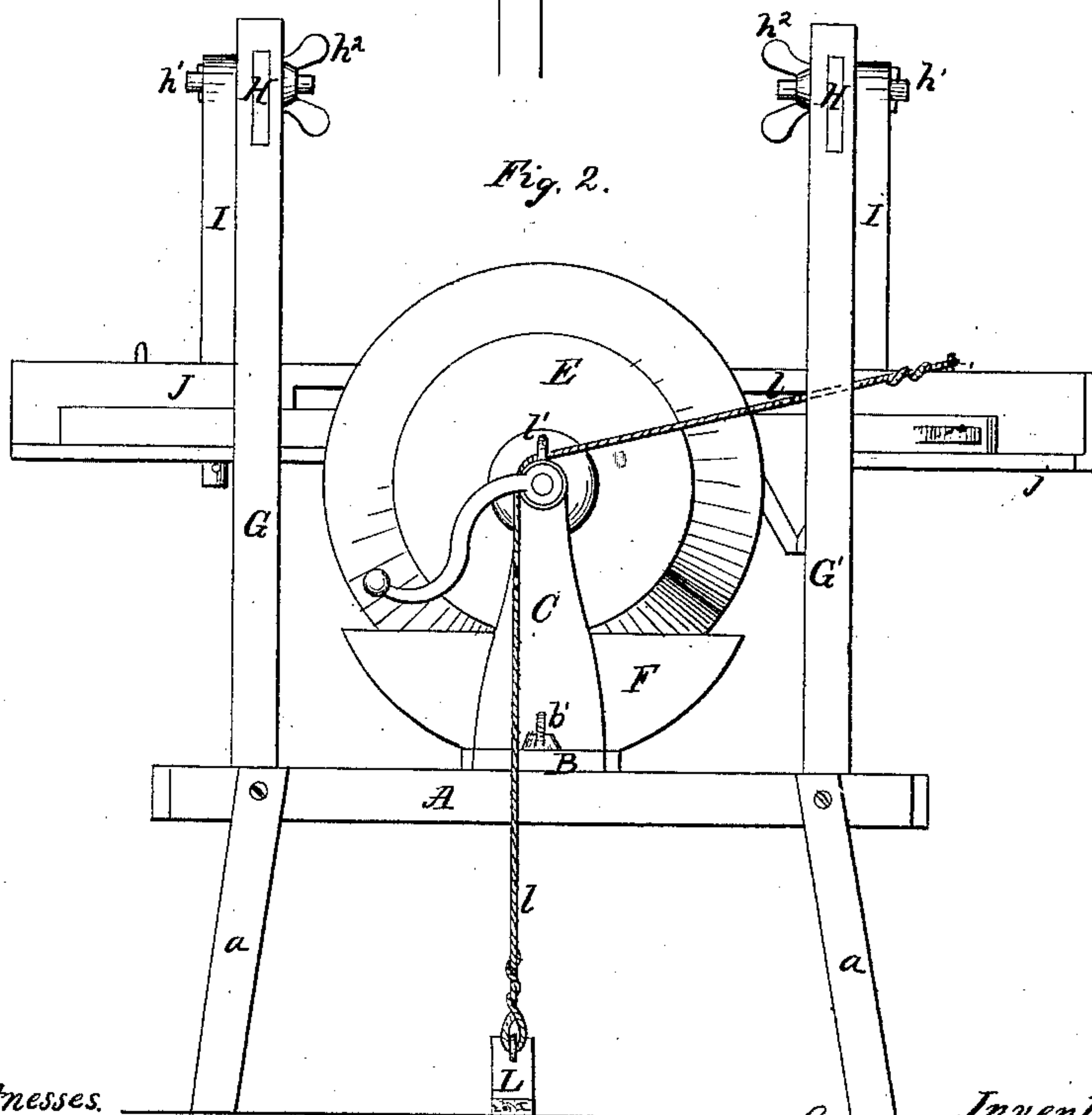
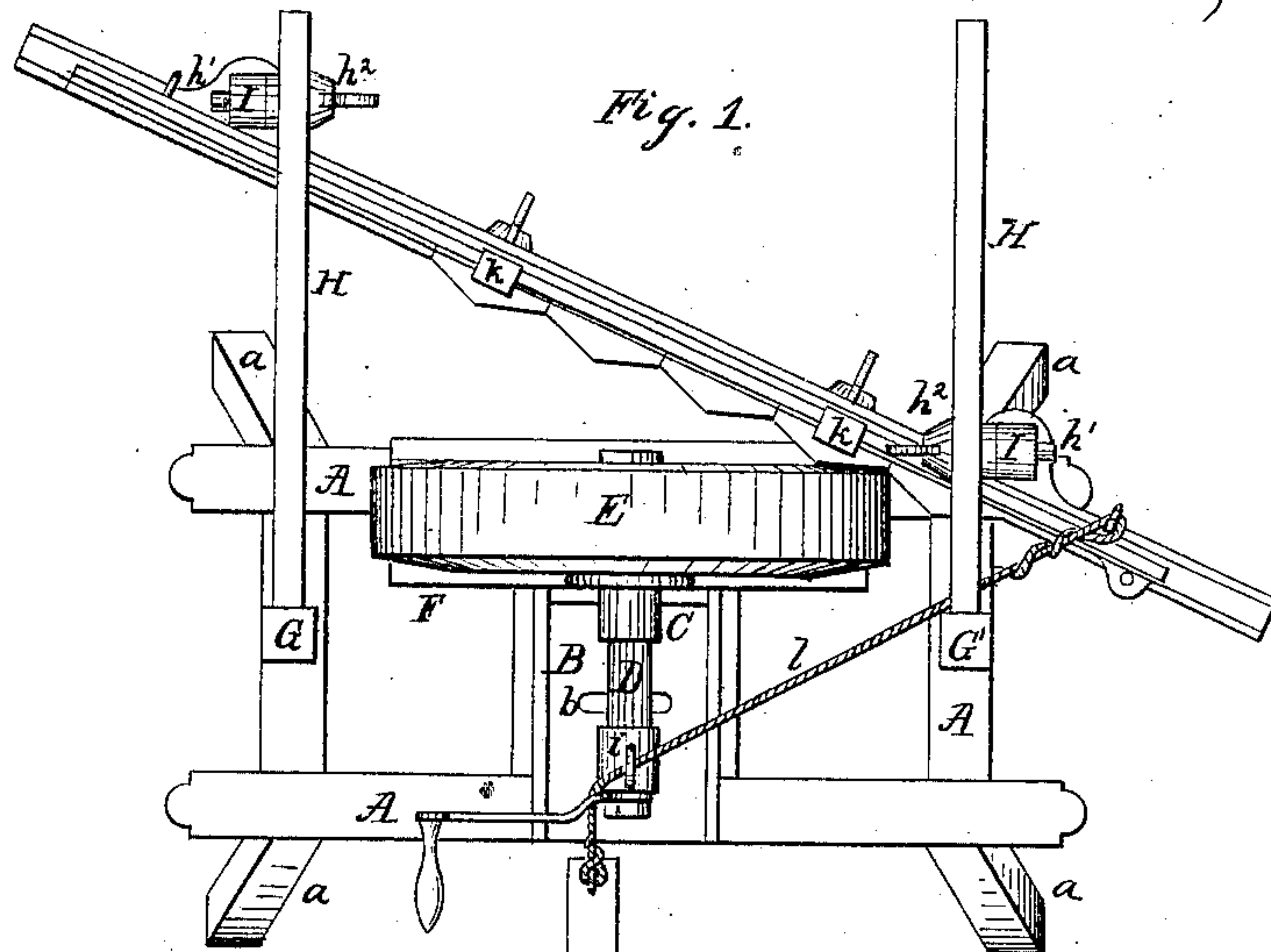


S. D. Wackman, 2 Sheets-Sheet 1.

Sharpening Mowing-Machine Knives.
N^o 78 623. Patented June 2, 1868.

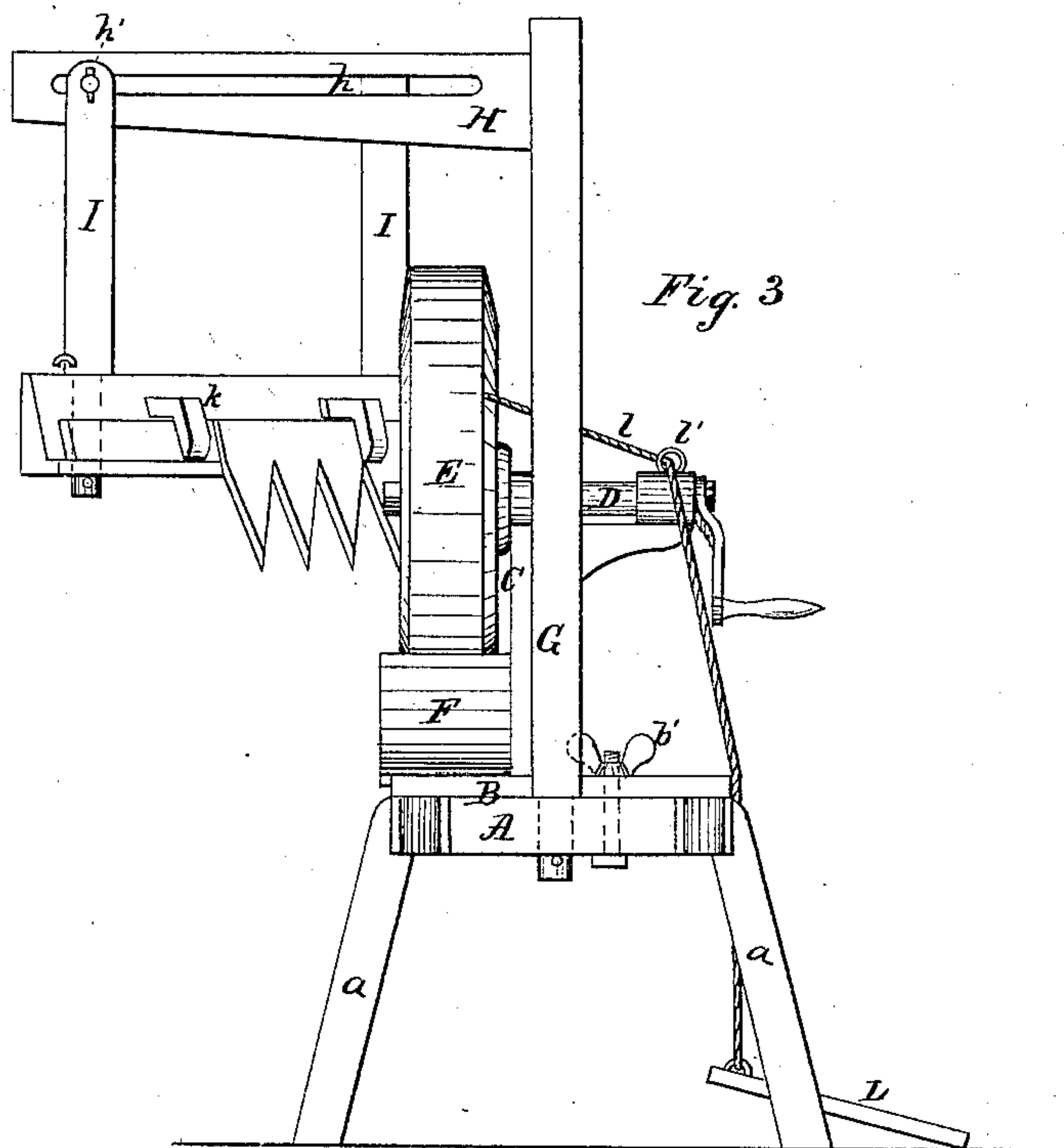
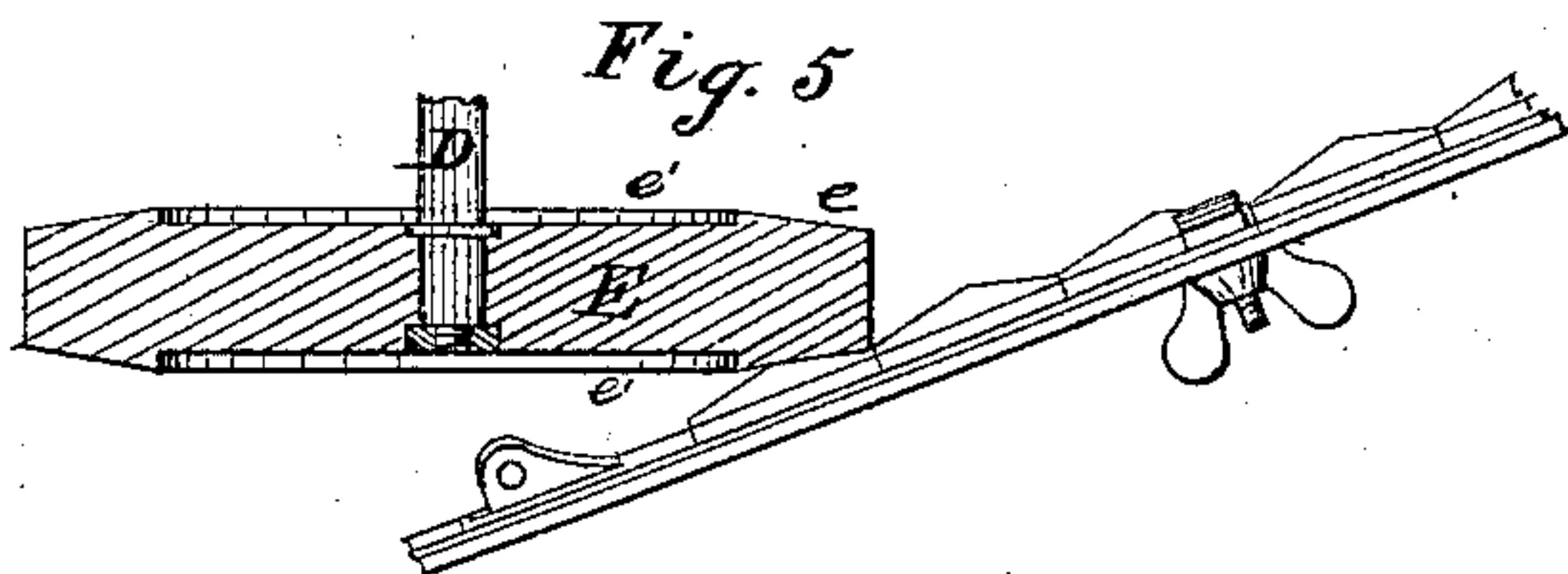
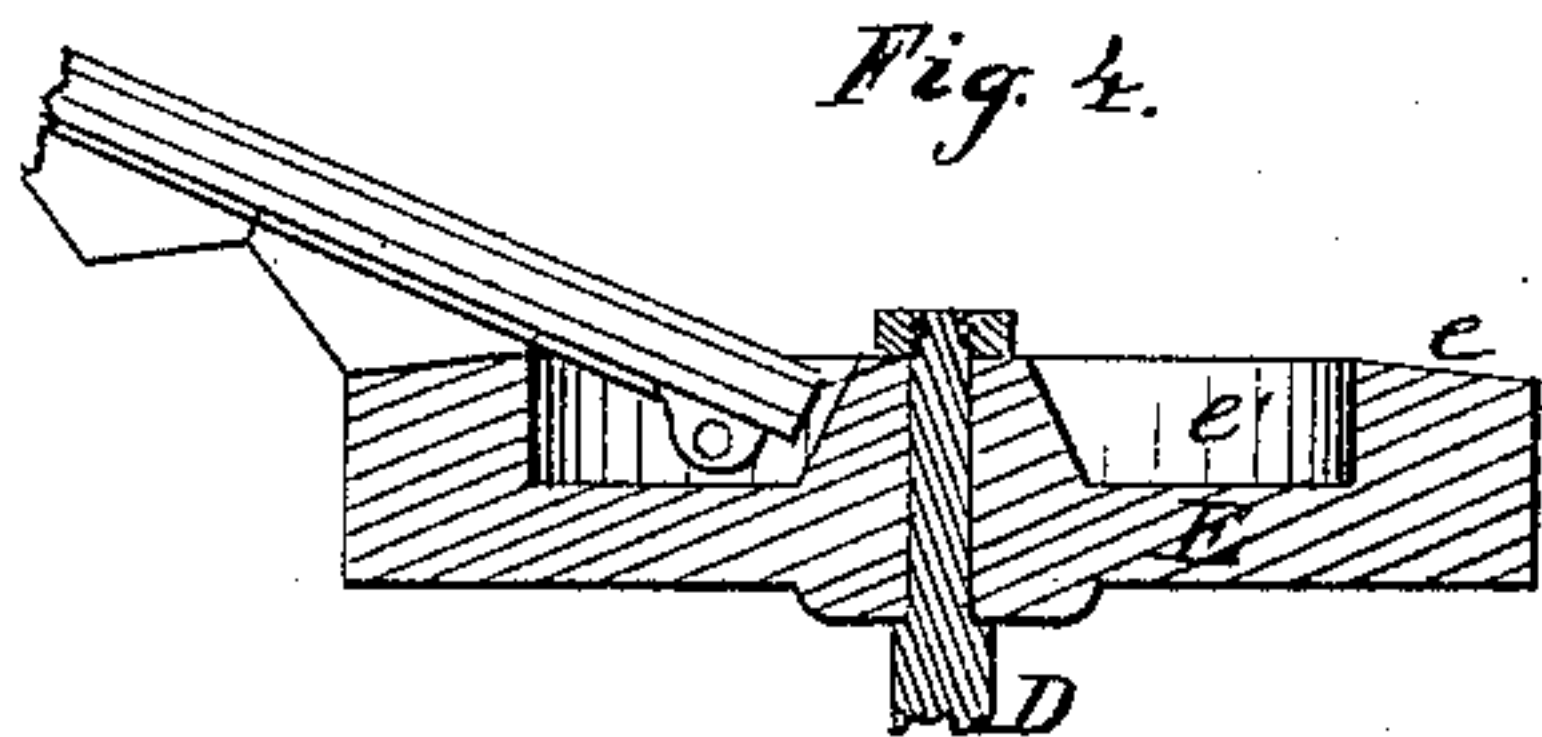


Witnesses.
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Inventor.
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Sharpening Mowing-Machine Knives.
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United States Patent Office.

SMITH D. WACKMAN, OF AUBURN, NEW YORK.

Letters Patent No. 78,623, dated June 2, 1868.

IMPROVEMENT IN MACHINES FOR GRINDING THE CUTTERS OF MOWING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SMITH D. WACKMAN, of Auburn, in the county of Cayuga, and State of New York, have invented certain new and useful Improvements in Machinery for Sharpening Harvester-Cutters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a plan or top view of a machine to which my improvements are applied.

Figure 2 represents a view in elevation of one side of the same, and

Figure 3 represents a similar view of the same, as seen from one end.

Figure 4 represents a transverse central section, through a stone, of a modified form, showing another way in which the section nearest the eye of the cutter-bar may be sharpened.

Figure 5 represents a similar section through my improved stone, showing the way in which I prefer to grind the knives.

The first branch of my invention relates to the clamp-frame in which the cutters are held while being sharpened, and this part of my invention consists in combining with a grindstone an adjustable clamping-frame, suspended from overhanging arms, whereby the cutters can be presented to the stone at any desired angle.

The next part of my invention consists in so constructing the oscillating overhanging frame that it may readily be attached to or removed from the frame of the grindstone, whereby the machine is rendered portable.

The next part of my invention consists in combining with an overhanging grindstone, having its supports pivoted so as to allow it to turn, an adjustable suspended oscillating clamp-frame, whereby great facility in grinding cutters of different angles is secured.

In the accompanying drawings, which show all my improvements as embodied in one machine, and exemplify one practical way of carrying out my invention,

A stout frame, A, is shown, as supported on legs *a*.

The grindstone E is mounted on one end of a shaft, D, turning in suitable bearings in a bracket or standard, C, and driven by a crank, or in any other well-known way. This standard C is mounted on a bed-plate, B, which rests upon the frame A, to which it is clamped by a set-screw, *b'*, passing through a slot, *b*, in the bed-plate, and forming a pivot, on which the bed-plate may be turned horizontally, to vary the angle of the face of the stone relatively to the frame. I am aware, however, that a stone mounted in a frame, turning on a pivot, is not new. A water-trough, F, is also mounted on the bed-plate B.

The grindstone, as shown in fig. 5, is constructed with its sides bevelled near the periphery, at an angle. The cutters are ground on this bevelled part of the stone. When the bevelled edge of the cutter-section lies flat against or parallel with the grinding-surface, as it does when being sharpened, the cutter-bar is presented at such an angle to the side of the stone that the eye of the cutter-bar projects beyond the stone, and is thus prevented from striking it. This obviates what has heretofore proved to be a serious obstacle to the success of this class of machines.

In order to adapt the stone to cutters of different angles of bevelling, I form a central depression, *e*², in the side of the stone, as shown in fig. 5. This depression allows the eye of the cutter-bar to pass within the plane of the stone, if desired.

I have illustrated this idea more fully in fig. 4, which shows a modified form of the stone. In this figure a central boss is shown, leaving an annular groove, *e*¹, of a width and depth sufficient to admit the entire eye within the plane of the stone, if necessary. I generally, however, prefer to apply the cutter-bar to the stone at the angle shown in fig. 5, as, in that position, the eye can be moved endwise and forward without striking the stone.

I am aware that it has been proposed to form annular grooves in the side of a grindstone, but such grooves were merely for the purpose of forming a raised band for a grinding-surface, and were not adapted to receive the eye of the cutter-bar, nor were they used in combination with a bevelled grinding-surface.

In fig. 5, both sides of the stone are shown as bevelled, and as having central depressions.

Two vertical posts, G G', are mounted in the end-timbers of the frame A, their lower ends being rounded, and passing through round holes in the frame. They are fastened by pins passing transversely through them below the frame. The posts are thus free to turn axially in the frame.

A bracket or arm, H, projects horizontally from each of these posts, and has a horizontal slot, h, in it, in which a journal, h¹, moves. These journals are provided with collars and jam-nuts h², by which they can be clamped at any desired distance from the posts G G'.

From these journals arms I are suspended, so as to swing freely in a vertical plane, at right angles to their bearing. The lower ends of these arms are rounded, and pass through corresponding holes in a rack or bar, J, and are held by pins underneath the bar, or in some other proper well-known way. These arms can thus turn freely axially in the rack, which latter has a flange, j, on its lower edge, to support the cutter-bar, and adjustable hooked clamps k, to hold the bar on the flange.

The turning-posts G G' enable the rack J to be traversed lengthwise across the side of the stone, the slotted arms H and journals I enable it to be presented at any desired angle to the stone, and the swinging arms I enable it to be swung towards or from the stone, thus securing an almost unlimited range of adjustment.

To hold the cutters securely against the stone while being ground, a cord or wire, l, is attached to the rack, passed through an eye, l', and attached to a treadle, L, which may be attached to the frame, or rest loosely on the ground, as shown in the drawings.

By bearing on the treadle with his foot, the operator draws the rack and cutters up to the stone, and still has his hands free to turn the crank, or to slide or hold the cutters in the rack. When one side of the cutters is ground, the cord is detached from its fastening at one end of the clamp-frame, and attached at the other end, that it may draw and hold the other edges against the stone.

Jointed levers would answer a good purpose, but I prefer a cord or wire, as the more simple and effectual device.

The operation of the machine will readily be understood from the foregoing description.

It is manifest that the frame A, the bed-plate and stone, and the posts which support the clamp-frame, can readily be detached from each other, and that the posts and clamp-frame could readily be applied to an ordinary grindstone, and do good work.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, substantially as set forth, with a grindstone, of an oscillating adjustable clamping-frame, suspended from overhanging arms, for the purposes set forth.

2. The combination, substantially as set forth, with the frame A, of the vertical detachable turning-posts G, the overhanging slotted brackets H, the journals, the swivelling suspension-rods, and the clamp-bar, for the purposes specified.

3. The combination, substantially as set forth, of a supporting-frame, a bed-plate turning on a pivot on said frame, a grindstone mounted on and turning with said bed-plate, an adjustable overhead supporting-frame, and a suspended oscillating clamping-frame, for the purposes specified.

In testimony whereof, I have hereunto subscribed my name.

S. D. WACKMAN.

Witnesses:

HORACE T. COOK,
JOS. I. PRYTON.