F. MASON.
Grinding-Tool.

No. 216,093. Patented June 3, 1879.

Fig. 1.

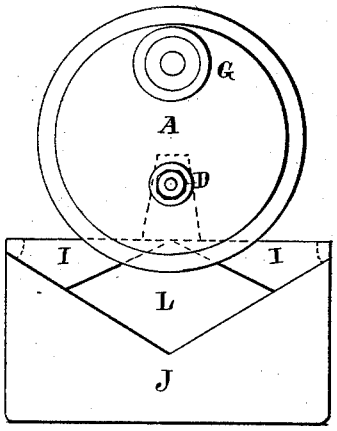


Fig. 2.

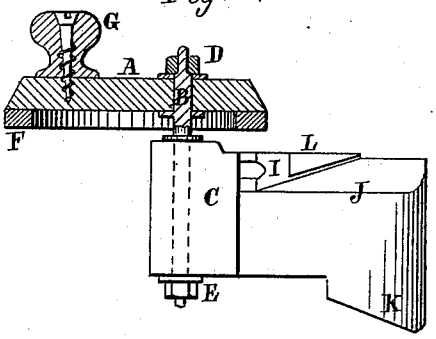


Fig. 3.

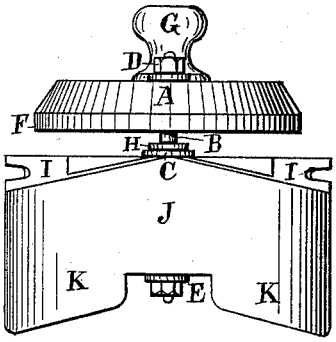
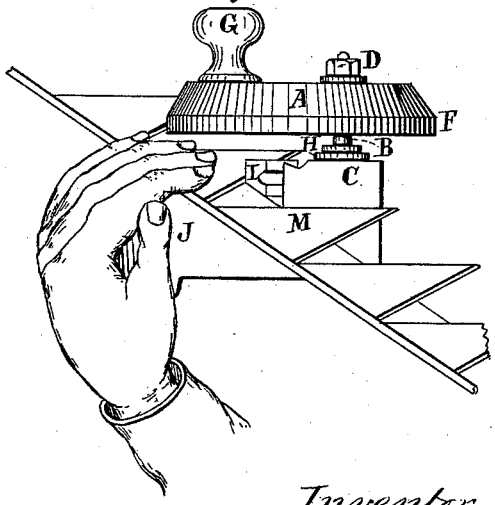


Fig. 4.



Witnesses.
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Henri Guillaume

Inventor
Francis Mason
per Henry Otto
atty

2 Sheets—Sheet 2.

F. MASON.

Grinding-Tool.

No. 216,093. Patented June 3, 1879.

Fig. 6.

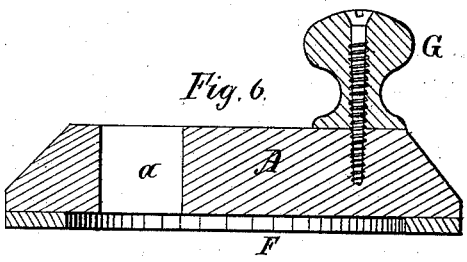
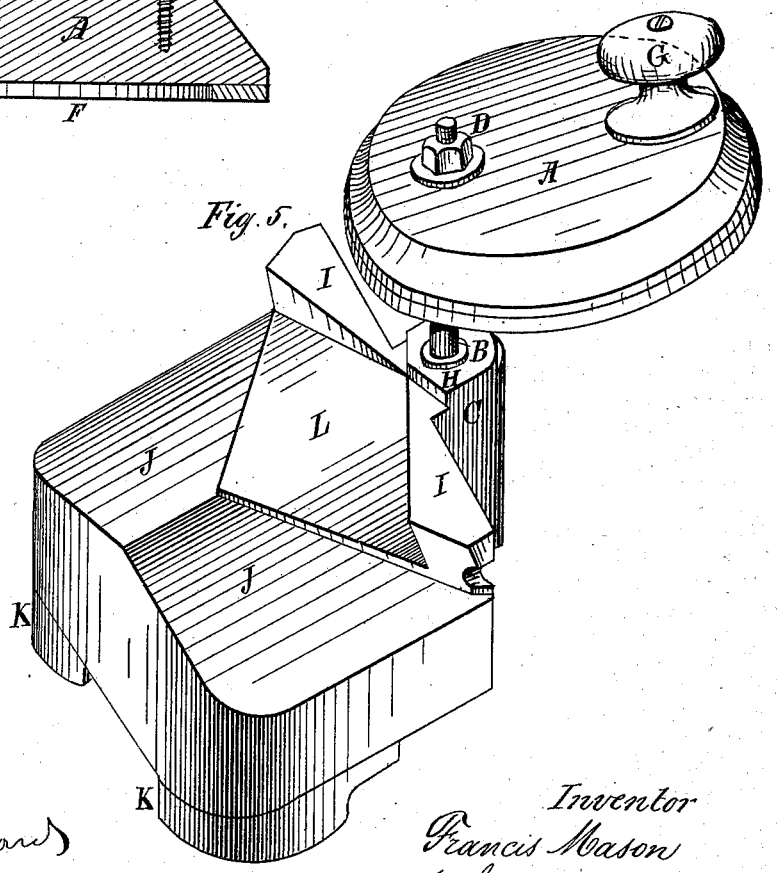


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANCIS MASON, OF LANCASTER, COUNTY OF LANCASTER, ENGLAND.

IMPROVEMENT IN GRINDING-TOOLS.

Specification forming part of Letters Patent No. **216,093**, dated June 3, 1879; application filed March 7, 1879.

To all whom it may concern:

Be it known that I, FRANCIS MASON, of Lancaster, in the county of Lancaster and Kingdom of England, have invented new and useful Improvements in Tools for Honing or Grinding Mowing-Machine and like Blades; and that the following specification is an exact and clear description of the same.

To enable others skilled in the art to comprehend my invention, I have annexed the drawings shown, and to them I refer.

This invention relates to a light hand-tool, to be operated by hand, to grind or hone the edges of mowing-machine and like blades.

Figure 1 is a plan; Fig. 2, elevation, partly in section; Fig. 3, front view; Fig. 4, side view, showing knife in place for grinding. Fig. 5 is a perspective view of the tool, and Fig. 6 is a transverse section of the grinding-disk.

It consists in a disk, A, mounted eccentrically on a pivot, B, working in a lug or boss, C, on a block or bed, J, hereinafter described. This disk is preferably held on the spindle by a clamp-nut, D, as shown, and the spindle is free to rise and fall in the hole in the boss C, being prevented from being drawn out by clamp-nut E, or a cottar or other equivalent. To the under side of the disk I cement or otherwise attach a ring of emery or other abrading composition, F. I find this a better way than using an entire disk, because an entire disk of sufficient diameter would require more pressure to make it bite or abrade the knife than can conveniently be applied by hand-pressure, while the narrow annular face of the ring requires but light pressure of the hand to produce a considerable pressure per unit of surface. I place a washer of felt or other suitable material on top of the boss C to prevent grit entering the hole and cutting the spindle, or in some cases place a collar on the spindle with projecting rim to still further shield the bearing. A handle, G, serves to rotate the disk. J is the main body or block of the tool, and to which the boss C is attached or forms part of it. The upper face of the block is beveled away from the center on either side, as shown, and formed so as to leave a diamond-shaped space with a beveled or slightly-rounded face, L, and elevated slightly above the surface of the block J. I I are two projections, shaped as shown, and made with a notch on either side, the use of which will be hereinafter described. K K are two beveled projections on the under side of J.

I now proceed to describe the method of using the tool and the use of its various parts. The operator sits down, say, upon the driving-wheel of the mower, and taking the knife-bar in his left hand, with the bevel of two teeth upward and their points facing him, places its end on his right boot and leans it against the inside of his left knee. Taking the knob of the tool in his right hand he shakes the block down to the end of the spindle. He then applies one of the beveled faces of the block to the leaf of the blade to be ground, and, applying the palm of his left hand to one of the projections K K and the ends of his fingers to the upper side of the knife-bar, he holds the two together, the projections K K being formed to give a convenient hold to the palm of the hand, and the thickness of the block being such as to allow a hand of average size to conveniently grasp the block and knife-bar, which in this position is caused to rest in one of the notches formed in the outer side of projections I. The emery ring being now pressed against the knife and rotated will grind the whole of one bevel of this leaf of the knife. The opposite bevel of the leaf is ground by applying the other beveled face of the block to it in the same manner. When half the length of the knife has been ground or honed it will be found convenient to turn the knife-bar end for end, resting its end on the left boot, leaning it against the right knee; then, grasping the tool and knife with the right hand and rotating the ring with the left, the remainder of the leaves may be conveniently ground. The angle at which the faces of the block J, space L, and projections I I are cut depend, of course, on the pitch of the blades of the knives to be ground; but, as most mowing-machine knives are made at approximately the same pitch, the same tool can be used for different blades, or the operator can firmly hold it in position even if it does not lie quite evenly on the block.

The tool can be made of various materials. A wooden disk is preferable, as the abrading rings are easily fixed to it.

I claim as my invention—

1. A portable grinding-tool for mowing-machine knives, consisting essentially of the supporting-block having its upper face of a shape to conform to that of the knife and a grinding-disk carrying an abrading material pivoted to said block eccentrically and adapted to be rotated by hand, substantially as described, for the purpose specified.

2. A portable or hand grinding-tool for mowing-machine knives, consisting essentially of a supporting-block having its upper face of a shape to conform to that of the knife and a grinding-disk carrying an abrading material pivoted to said block eccentrically and adapted to rise and fall in its pivotal bearing and be rotated by hand, substantially as described, for the purpose specified.

3. In a hand-tool for grinding mowing-machine knives, the combination, with the supporting-block provided with projections or abutments I, arranged to conform to the shape of the knife, of the grinding-disk A, pivoted eccentrically to said supporting-block, substantially as described, for the purpose specified.

4. In a hand-tool for grinding mowing-machine knives, the combination of the supporting-block J, having the raised beveled face L and the abutments I, both of a shape to conform to that of the knife, with the grinding-disk A, pivoted eccentrically to said block J, substantially as described, for the purpose specified.

5. In a hand-tool for grinding mowing-machine knives, the combination of the supporting-block J, having its upper face beveled and provided with the raised beveled face L, as set forth, and the projections I, provided with notches on their outer sides, with the grinding-disk A, carrying the abrading material and pivoted eccentrically to the block J, so as to permit its rotation, and at the same time enable it to rise and fall in its pivotal bearing, all constructed, arranged, and operating substantially as described, for the purpose specified.

FRANCIS MASON.

Witnesses:
WILL. SWAINSON,
WILLIAM O. ROPER.