

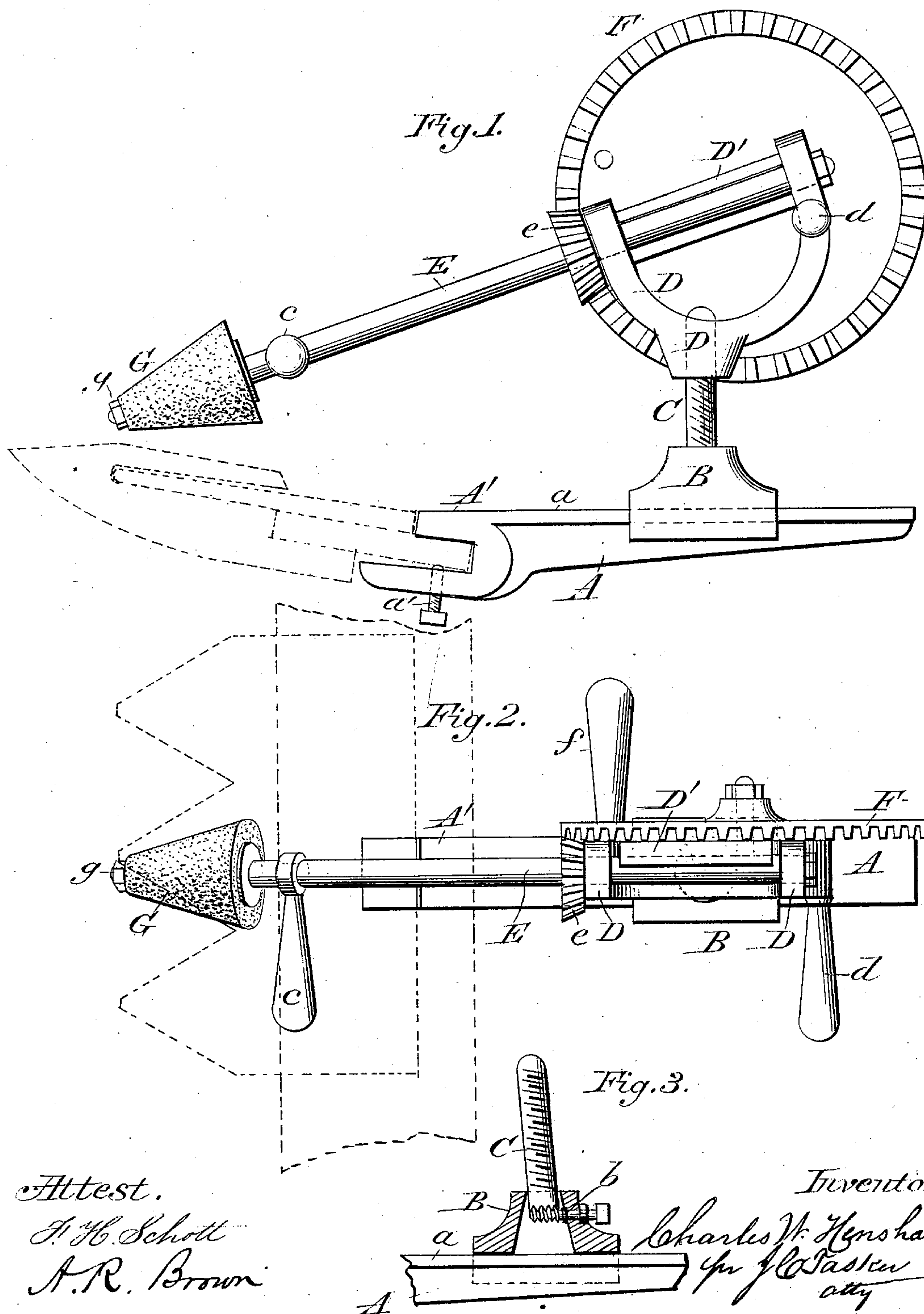
(No Model.)

C. W. HENSHAW.

MACHINE FOR SHARPENING MOWER AND REAPER KNIVES.

No. 255,980.

Patented Apr. 4, 1882.



UNITED STATES PATENT OFFICE.

CHARLES W. HENSHAW, OF MIDDLEWAY, WEST VIRGINIA.

MACHINE FOR SHARPENING MOWER AND REAPER KNIVES.

SPECIFICATION forming part of Letters Patent No. 255,980, dated April 4, 1882.

Application filed February 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. HENSHAW, a citizen of the United States, residing as Middleway, in the county of Jefferson and State of West Virginia, have invented certain new and useful Improvements in Machines for Sharpening the Knives or Cutting-Blades of Mowing-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to a portable implement for sharpening or grinding the knives or cutters of mowing-machines without the necessity of removing the same from the mowing-machine; and the invention consists in the construction and arrangement of parts, as hereinafter more fully described and claimed.

In the annexed drawings, which fully illustrate the invention, Figure 1 is a side elevation of my improved sharpening-machine, showing the same in position for operation. Fig. 2 is a plan of the same, and Fig. 3 is a sectional detail.

Like letters indicate like parts in the several views.

A represents a flanged clamping-bar, to which the adjustable bed or block B is attached. This block is recessed on its under side for engagement with the flange *a* on the bar A, upon which it is thus adapted to slide to vary the position of the operative mechanism. The block B carries an upright threaded standard, C, to which is attached a bifurcated bearing, D, in which is journaled the shaft E. The arms of the bearing D are connected on one side by a bar, D', having a stud, upon which is journaled the gear F. This gear meshes with a pinion, *e*, on the shaft E, and is provided with a handle, *f*, by which it may be turned so as to rotate said shaft.

It will be seen that the engagement of the bifurcated bearing D with the threaded standard C is such that by simply turning the bearing it may be raised or lowered upon said stand-

ard to any desired position. A handle, *d*, is attached to one arm of the bearing, by means of which it is held while operating the gear F with the other hand. The bearing may thus be turned upon the standard C, so as to vary the direction of the grinding or sharpening as required, and this without intermitting the rotation of the shaft E.

To the end of the shaft E is fixed a cone, G, of emery or other suitable grinding material. This cone may be held in place by means of a nut, *g*, so as to be readily renewed when desired.

By referring to Fig. 3 it will be observed that the connection of the lower end of the standard C with the block B is such that said standard may be inclined to any desired position by simply turning the set-screw *b*. This set-screw passes through the block B and supports the standard, the lower end of which is threaded to correspond with similar threads formed on the inner end of the set-screw.

It is obvious that by turning the screw *b* the standard C will be tilted forward or back to a corresponding degree, so as to vary the inclination of the shaft E and its grinding-cone G.

Near the outer end of the shaft E may be attached a loose-fitting handle, *c*, which is designed to be used, instead of the handle *d*, when it is desired to exert a greater grinding-pressure on the knife or blade to be sharpened.

At the forward end of the bar A is a clamp, A', by means of which (it being provided with a set-screw, *a'*) the apparatus is attached to the cutter-bar of a mowing-machine, as shown in Figs. 1 and 2. It will thus be seen that the sickle-bar, knives, or cutters of a mower may be readily sharpened and ground without removing them from their position in the mowing-machine.

The operation of my grinding and sharpening machine is as follows: The cutter-bar of the mowing-machine having been first elevated and secured in a convenient position, the bar A is attached thereto by means of the clamp A'. The block B is adjusted upon the bar A, and the set-screw *b* is turned so as to incline the standard C and shaft E in such a manner as to bring the inner cone, G, in proper con-

tact with the teeth of the sickle-bar. The gear-wheel F is now revolved, so as to rotate the shaft E and its grinding-cone, the apparatus being held meanwhile by means of the handle *d*, attached to the bearing D, or by means of the handle *c*, that is fitted loosely upon the operating-shaft, the latter handle being especially designed for the purpose of exerting an increased pressure of the cone G upon the surface to be ground. By means of the handle *d* the bearing D is turned so that the direction of the shaft E may be varied from side to side as required. This handle may also be used to move the parts back and forth upon the bar A as required.

During the operation of grinding or sharpening the sickle-bar may be shifted within its guard as required, and by loosening the clamp A' the grinding apparatus may also be shifted upon the cutter-bar from time to time as the operation of grinding progresses.

By this method of sharpening or grinding the knives or cutters of mowing-machines without removing them therefrom it is obvious that a great saving of time and labor is effected. The machine is also adapted to sharpen said cutters after the same have been removed from the mower. In this case the cutter is clamped to a suitable board or other support, to which the grinding apparatus is also secured, or the latter may be furnished with a separate support, the operation of the machine being in other respects the same as already described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a sharpening-machine, the combination of a flanged clamping-bar, a recessed block adapted to slide thereon, a threaded

standard secured to said block and adapted to be inclined forward and back, a bearing adjustable upon said standard and carrying a gear-wheel, and a shaft having a pinion meshing with said wheel and a grinding-cone secured to the end of said shaft, substantially as shown and described.

2. In a sharpening-machine, the combination, with the flanged bar A, having clamp A', of the recessed block B, adjustable upon said bar, the threaded standard C, secured thereto, and the set-screw *b*, for adjusting the inclination of said standard, substantially as shown and described.

3. In a sharpening-machine, the combination, with the bar A, block B, and threaded standard C, of the adjustable bearings D D', gear-wheel F, and shaft E, having pinion *e* and grinding-cone G, substantially as shown and described.

4. In a sharpening-machine, the combination, of the bar A, having flange *a* and clamp A', the recessed block B, adjustable thereon, and provided with threaded standard C and set-screw *b*, for adjusting the inclination of said standard, the adjustable bearings D D', attached to said standard and provided with handle *d*, gear-wheel F, journaled in bearing D' and having handle *f*, and the shaft E, journaled in bearing D, and provided with pinion *e*, loose-fitting handle *c*, and grinding-cone G, substantially as shown and described.

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

CHARLES W. HENSHAW.

Witnesses:

PHILIP MAURO,
A. R. BROWN.