

H. F. & M. L. BUSH.

GRINDSTONE-SHARPENING ATTACHMENT.

No. 191,308.

Patented May 29, 1877.

Fig. 1

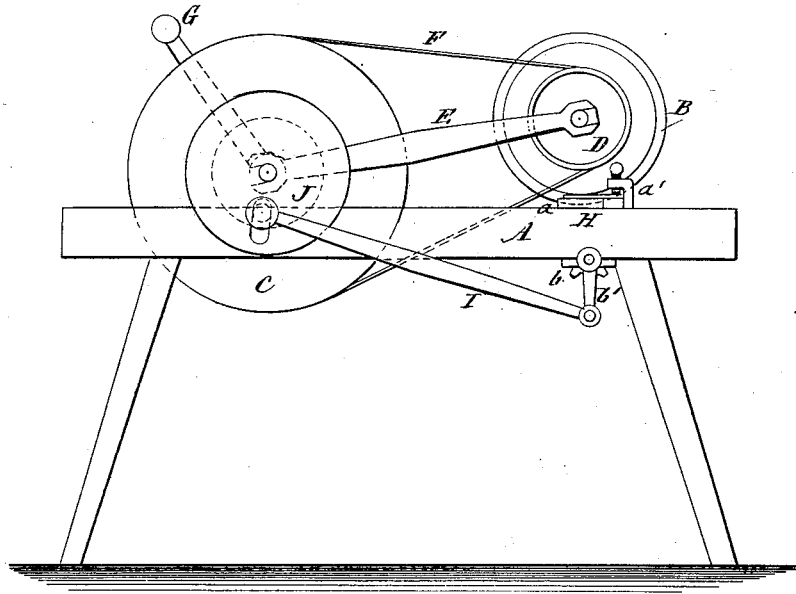


Fig. 2

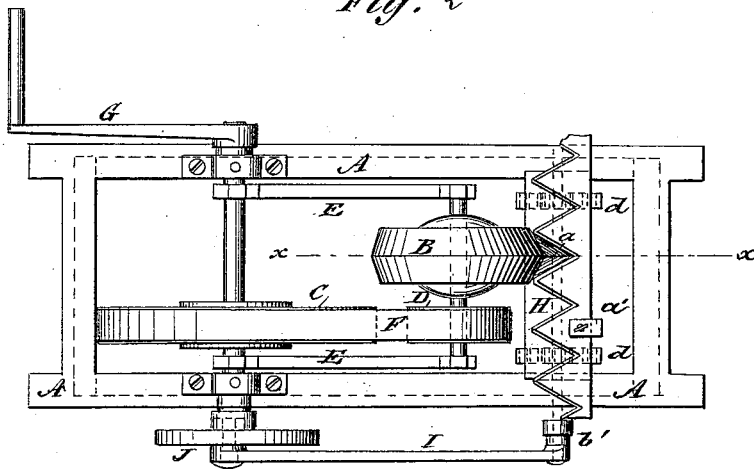
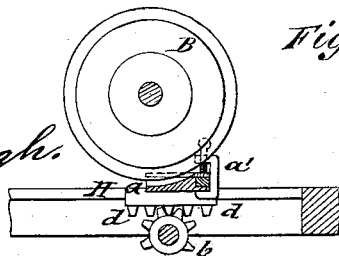


Fig. 3

WITNESSES:  
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# UNITED STATES PATENT OFFICE.

HENRY F. BUSH AND MARTIN L. BUSH, OF DOUGLASSVILLE, PENNSYLVANIA.

## IMPROVEMENT IN GRINDSTONE SHARPENING ATTACHMENTS.

Specification forming part of Letters Patent No. **191,308**, dated May 29, 1877; application filed April 9, 1877.

*To all whom it may concern:*

Be it known that we, HENRY F. BUSH and MARTIN L. BUSH, of Douglassville, in the county of Berks and State of Pennsylvania, have invented a new and Improved Attachment to Grindstones for Sharpening the Knives of Mowing and Reaping Machines, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a side elevation, and Fig. 2 a top view, of our improved grindstone attachment for sharpening the knives of mowing and reaping machines; and Fig. 3 is a detail vertical longitudinal section on line *xx*, Fig. 2, of the sharpening grindstone and the knife-reciprocating mechanism.

Similar letters of reference indicate corresponding parts.

The invention is designed to provide for the common grindstones an improved attachment by which the knives of mowing-machines may be sharpened in rapid and superior manner, two edges of adjoining knife-sections being ground by one stone at one and the same time.

The invention consists of a second grindstone, of **V** or diamond shape, that is hung in a suitable frame, centered to the shaft of the main grindstone, and revolved by belt and pulley connection with the same. The knife of the mowing-machine is clamped on a base-plate and reciprocated toward the oscillating grindstone by suitable mechanism.

Referring to the drawing, **A** represents the supporting-frame; **B**, the additional grindstone having a diamond or **V** shaped circumference; **C**, the main grindstone, which is revolved by a hand-crank, **G**, and connected by a belt, **F**, with a pulley, **D**, of the shaft of grindstone **B**, so as to serve as a driving-wheel for the diamond-shaped grindstone.

By removing the belt the main grindstone can be used in the customary manner for sharpening knives, tools, &c. The shaft of the diamond-shaped grindstone **B** is hung into

bearings of a frame, **E**, that is centered in the shaft of the main grindstone, and supported, when at rest, on a lateral base-plate, **H**, which has at the point of contact a **V**-shaped recess for the grindstone, as shown in Figs. 2 and 3, and to which the knife of the mowing or reaping machine is tightly secured by one or more clamp-screws, *a'*. The knife-supporting plate **H** is guided on frame **A**, and reciprocated by mutilated pinions *b*, that gear with racks *d* at the under side of the base-plate **H**, the pinions being operated by a crank, *b'*, at the outer end of their shaft, connecting-rod **I**, and crank-disk **J**, keyed to the shaft of the main grindstone.

By turning the hand-crank of the main grindstone the diamond-shaped grindstone is revolved, and simultaneously therewith a reciprocating motion imparted to the base-plate and knife, so that the latter passes back and forth under the stone and causes the same to rise and fall according to the position of the knife. The grindstone acts on two edges of adjoining knife-sections, and accomplishes, thus, the sharpening of two edges at the same time by one stone, by which the sharpening of the entire knife is obtained in half the time as heretofore, and in a regular, accurate, and uniform manner.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The combination of a driving main grindstone with a second revolving grindstone, turning in bearings of a swinging frame, centered to shaft of main grindstone, and with a reciprocating knife-supporting bar or plate, substantially as and for the purpose herein specified.

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MARTIN L. BUSH.

Witnesses:  
JOHN R. SMITH,  
ALBERT SLOCOM.