(No Model.) 2 Sheets—Sheet 1.

A. S. VOSE.

TOOL GRINDING MACHINE.

No. 457,387. Patented Aug. 11, 1891.

Fig. 1.

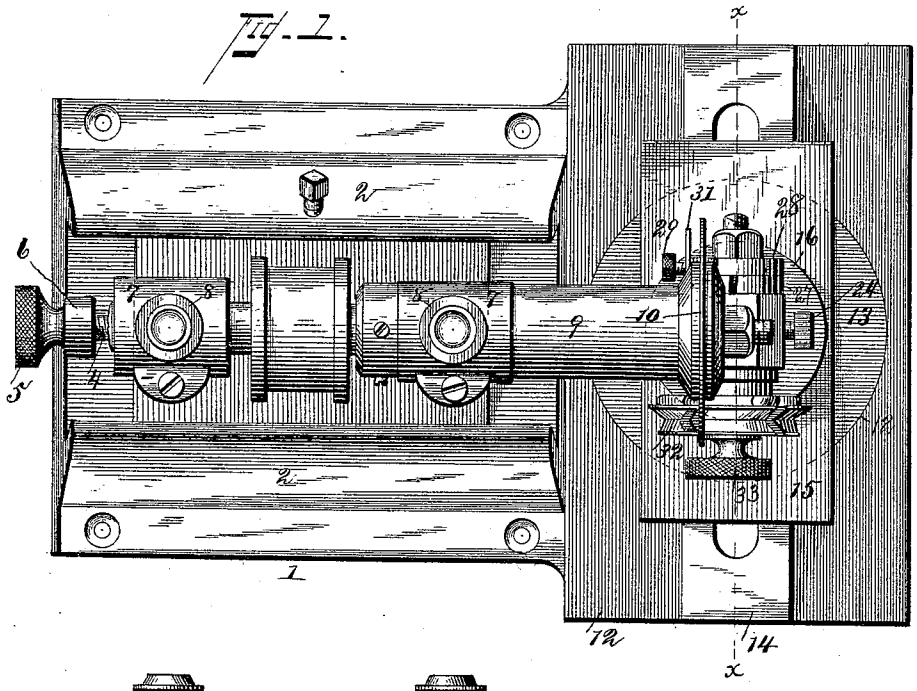
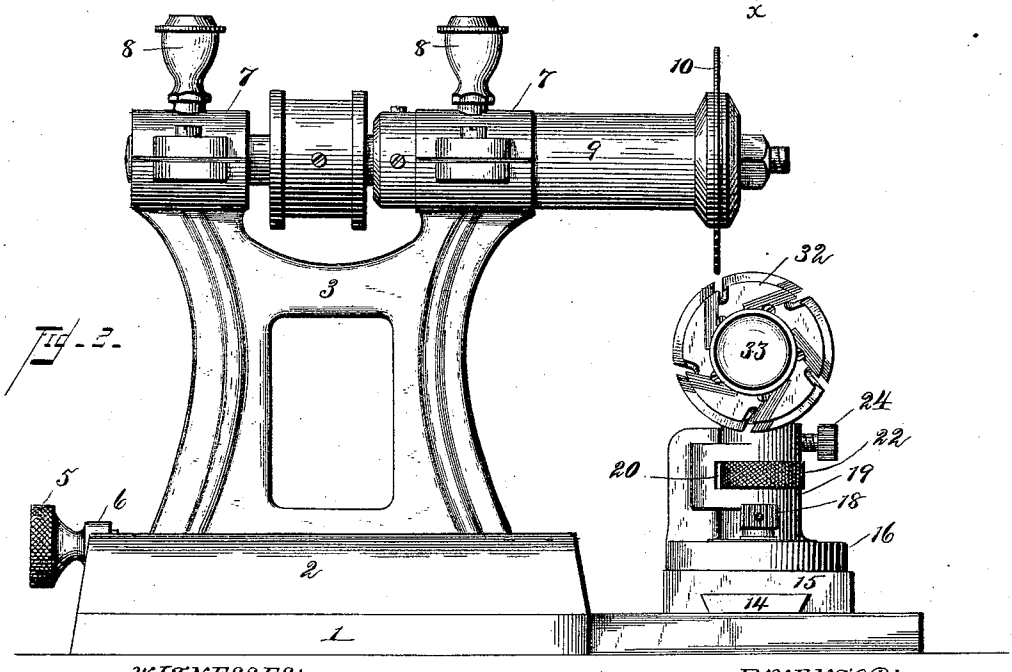


Fig. 2.



WITNESSES:
F. L. Ouraud.
W. B. Coombs

INVENTOR:
Ambrose S. Vose,
by Sams Dagger & Co.,
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

A. S. VOSE.

TOOL GRINDING MACHINE.

No. 457,387. Patented Aug. 11, 1891.

Fig. 3.

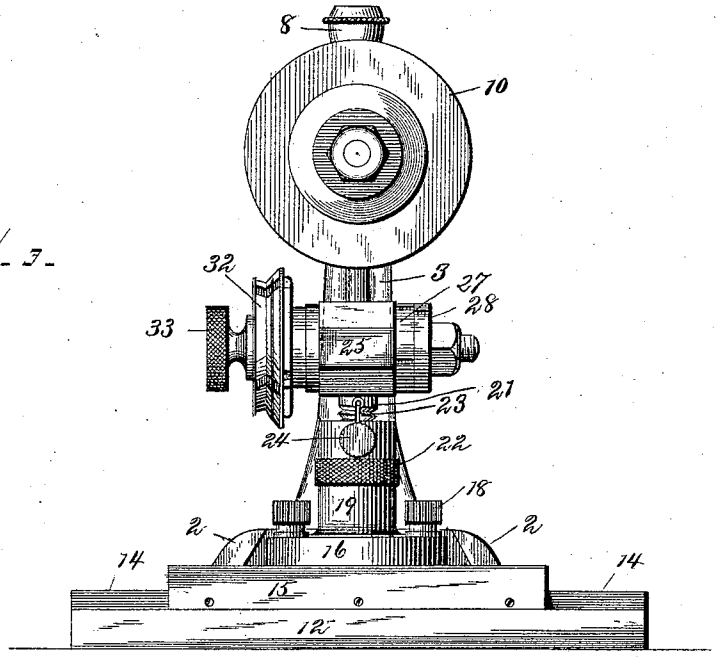
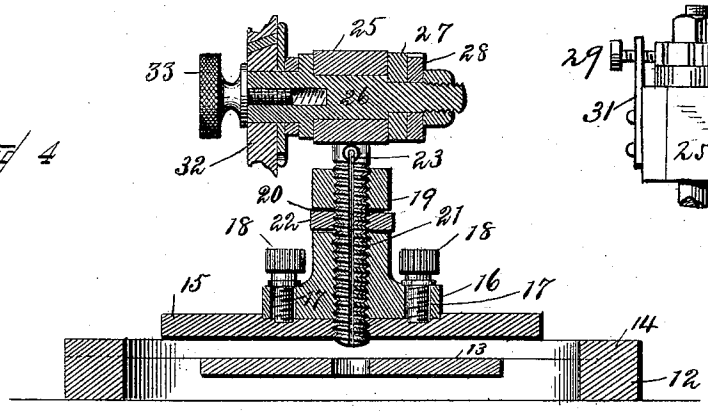


Fig. 4



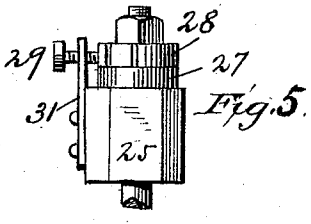


Fig. 5.

WITNESSES:

F. L. Durand

S. L. Coombs

INVENTOR:

Ambrose S. Vose,

by Davis Dagger & Co.

Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

AMBROSE S. VOSE, OF BOSTON, MASSACHUSETTS.

TOOL-GRINDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 457,387, dated August 11, 1891.

Application filed November 22, 1890. Serial No. 372,331. (No model.)

To all whom it may concern:

Be it known that I, AMBROSE S. VOSE, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Tool-Grinding Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in tool-grinding machines, and is more particularly designed for grinding the knives of rotary sole-trimming machines.

The object of the invention is to provide a simple and economical machine of the above description by which tools may be ground in a rapid and efficient manner.

The invention consists in the novel construction and combination of parts hereinafter fully described, and definitely pointed out in the claim.

In the accompanying drawings, Figure 1 is a plan view of a grinding-machine constructed in accordance with my invention. Fig. 2 is a side view of the same. Fig. 3 is a front view. Fig. 4 is a sectional view on the line $x\,x$, Fig. 1. Fig. 5 is a detail plan view showing the spring and headed pin for preventing the cutter-shaft from rotating.

In the said drawings, the reference-numeral 1 designates the bed or base of the machine having the horizontal flanges 2, which form guides for the movable bracket 3, the sides of which are beveled to correspond with the said flanges. Passing centrally through the lower part of the bracket is a screw-threaded rod 4, provided with a milled head 5. The rod also passes through an upwardly-projecting lug 6, secured to the base 1. By turning this screw the bracket can be moved back and forth on the base. At the upper end the bracket is provided with circular boxes 7, having lubricators 8, which form the journals of the driving-shaft 9, carrying at its forward end an emery or other grinding-disk 10, secured thereto in any suitable manner.

Formed with or secured to base 1 is an extension 12, having a circular recess in line with the longitudinal center of the machine. Within this recess seats a circular disk 13, which is capable of rotating freely therein. The upper face of this disk is flush with the upper surface of the extension and is provided with a transverse dovetailed rib or projection 14. Engaging with this projection is a correspondingly-shaped slide 15, carrying a central annular disk 16, having slots 17.

The numeral 18 designates set-screws passing through these slots into the slide 15, by means of which said disk is adjustably secured to the slide. Projecting upwardly from the disk 16 is a hub 19, having a recess 20 about midway of its length and with a vertical screw-threaded bore, with which engages a screw 21, which also passes through and is secured to a milled nut 22, located in said recess 20, so that said screw may be raised or lowered by rotating said nut. The screw 21 is provided with a vertical groove 23, with which can be engaged the set-screw 24, passing through the upper part of the hub for the purpose of rigidly holding said screw 21 and preventing it from rotating.

Mounted upon the upper end of screw 21 is a circular bearing 25, through which passes the shaft 26, having collars or annular flanges 27 and 28, securely fixed thereon. The collar 28 is provided on its periphery with a number of equidistant notches, with which engages the correspondingly-shaped end of a headed pin 29, which passes through a slot 30 in a spring 31, secured to the bearing 25. When the said pin engages with one of said notches, the shaft 26 is prevented from rotating.

The numeral 32 designates a rotary sole-trimming cutter secured to shaft 26 by set-screw 33.

The operation will be readily understood. The tool to be ground is secured on the shaft 26, which forms the tool-holder, and is properly adjusted with relation to the grinding-disk. Motion is imparted to the driving-shaft, which rotates the grinding-disk. After being properly ground the tool-holder is rotated, so as to bring another cutter in position, by means of the spring-actuated pin and the notches in collar 28. By this means the tool-holder will always properly present the knives to the grinding-disk. It will be noted that

the tool-holder can have a vertical, a horizontal, and an oscillating movement, so as to accommodate the tool being ground to all necessary requirements.

Having thus described my invention, what I claim is—

In a grinding-machine, the combination, with a driving-shaft and grinding-disk carried by a longitudinally-movable bracket, of a slide working on a dovetailed rib or projection, a slotted disk secured to said slide by set-screws and having an upwardly-projecting hub provided with a recess and a screw-threaded bore, a screw working in said hub having a vertical groove, a set-screw in the hub engaging with said groove, a bearing carried by said screw, and an oscillating shaft or tool-holder, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

AMBROSE S. VOSE.

Witnesses:

WILLIAM A. PEARSON,

ANDREW P. FISHER.