G. A. KNOWLTON.

GRINDING MACHINE.

No. 189,235. Patented April 3, 1877.

Fig. 1

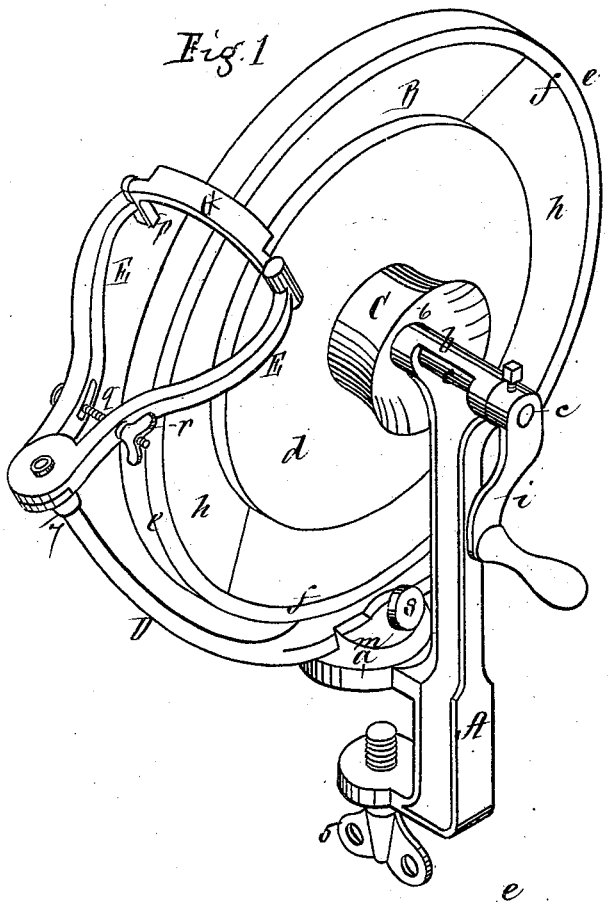


Fig. 3.

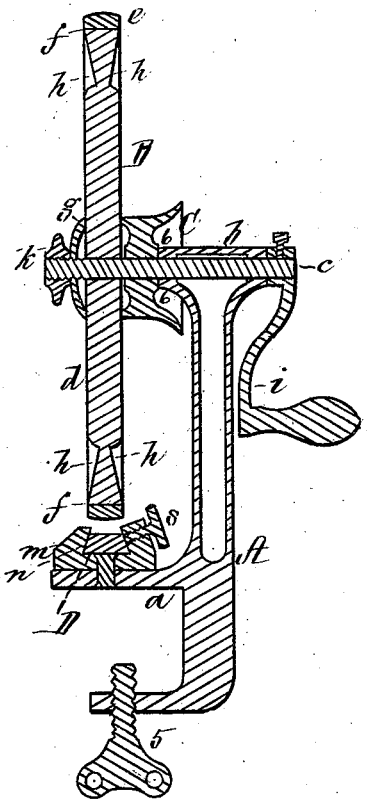


Fig. 2.

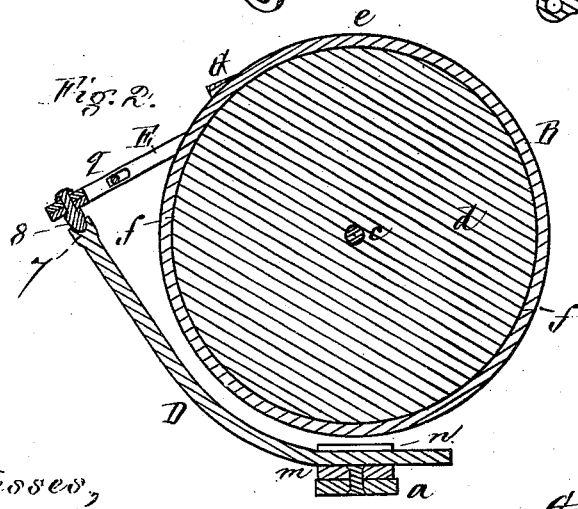
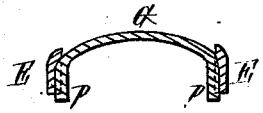


Fig. 4.



Witnesses,
W. J. Cambridge
J. E. Cambridge

Inventor,
George A. Knowlton,
Per Teschemacher & Stearns,
Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE A. KNOWLTON, OF NATICK, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND WILLIAM D. PARLIN, OF SAME PLACE.

IMPROVEMENT IN GRINDING-MACHINES.

Specification forming part of Letters Patent No. **189,235**, dated April 3, 1877; application filed January 13, 1877.

To all whom it may concern:

Be it known that I, GEORGE A. KNOWLTON, of Natick, in the county of Middlesex and State of Massachusetts, have invented an Improved Device for Sharpening Shoe-Shaves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the device which I employ for sharpening shoe-shaves. Fig. 2 is a longitudinal vertical section through the center of the same. Fig. 3 is a central transverse vertical section; Fig. 4, detail in section.

Shoe shaves or cutters for trimming the edges of the soles and heels of boots and shoes have usually been sharpened by holding the tool in the hand, and passing the blade back and forth in contact with the surface of a coating of emery, laid either upon a leather strap or a strip of wood, which method was objectionable for the reason that it was impossible to constantly keep the blade presented at the same angle of inclination to the grinding-surface, and the operation was slow and laborious.

To overcome the above-mentioned difficulties is the object of my invention, which consists, first, in the combination with a grinding-wheel revolved by hand, having its opposite sides tapering inwardly from its periphery, so as to admit of the turning and inclination of the blade without bringing its shanks or tangs into contact with the sides of the wheel, of an arm or rest, preferably made adjustable for supporting a holder, which carries the shoe-shave, by which its blade may be presented upon the grinding-surface at any desired angle of inclination, one of the parts being provided with a socket, and the other with a pin or projection fitting therein, whereby the blade may be moved or vibrated back and forth by hand over the revolving grinding-surface with great facility.

My invention consists, secondly, in a guard or shield for covering over and protecting the bearing of the shaft of the grinding-wheel from the dust produced by the wearing away of the grinding-surface, and that of the blade of the shave or cutter.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is a standard, which is provided with a foot-piece, *a*, and a set-screw, 5, by which to clamp it to a bench or table. The top of this standard is provided with a horizontal bearing, *b*, for a shaft, *c*, which carries a wheel, B, the greater portion *d* of which is of wood, with a thick coating, *e*, of emery around its periphery, the opposite sides of the wheel tapering inward from the outer circumferential line *f* of the wooden portion toward the center, so as to form annular depressions or recesses *h*, for a purpose presently to be explained.

The shaft is turned by hand applied to the crank *i*, and is provided with a flaring or bell-shaped guard, C, which extends beyond the end 6 of the bearing, and prevents the dust from the emery-wheel, and that produced by the grinding away of the shoe shave or cutter, from lodging thereon at this point, which would cause the undue wearing away of the shaft and bearing. The wheel is kept snugly up to this guard by means of a washer, *g*, clamped against it by a screw-nut, *k*, whereby the wheel is made to revolve in common with the shaft, as desired.

The foot-piece *a* is of nearly circular form, and has pivoted to its upper side a circular block, *m*, which is thus free to swivel thereon. This block *m* is provided with a dovetailed groove, *n*, in which slides the lower end of a bent or curved arm, D, the upper end of which is provided with a socket or depression, 7, for the reception of a projection, 8, on the under side of a pair of jaws, E, the outer ends of which are grooved and embrace the tangs or shanks *p* of the shoe shave or cutter G, used in trimming the edges of soles and heels of boots and shoes.

The pair of jaws E are provided with a screw, *q*, and nut *r*, by means of which the

distance between the outer ends of the jaws may be varied to accommodate shoe-shaves of different sizes, the jaws serving as an adjustable holder, E, for the tool, and the bent arm D as a sliding and swinging rest or support for the holder, by which construction the edge of the blade may be applied to the emery surface at any desired angle, it being simply necessary to draw the sliding rest out a sufficient distance, and to secure it in place when adjusted by a clamping-screw, *s*.

The holder is now taken in one hand and the projection 8 placed within the socket 7, when the wheel is revolved by turning the crank with the other hand, and the blade is readily moved from one of its extremities to the other over the emery surface, the tapering recesses *h* allowing the blade to be tipped up laterally thereto to any required inclination without bringing the tangs or shanks *p* into contact with the wheel, the socket 7 and the projection 8, in connection with the swinging of the arm or rest, admitting of the various movements common to a ball-and-socket joint.

The block *m* may be fixed rigidly to the foot-piece *a*, if desired; but I prefer to make it swiveling, as greater scope for the movement of the blade over the emery surface is thereby attained.

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

1. The curved guide D, secured by a set-screw, *s*, in combination with the caliper-leg holders E E, attached by a horizontal joint, 7, compressed by screw-nut *r*, and the grinding-wheel B, as described.

2. The guard C, provided with an expanding mouth covering the joint 6, in combination with the shaft *c*, bearing *b*, and grinding-wheel B, as specified.

Witness my hand this 9th day of January, A. D. 1877.

GEORGE A. KNOWLTON.

In presence of—
ASHER PARLIN,
PRISCILLA PRATT.