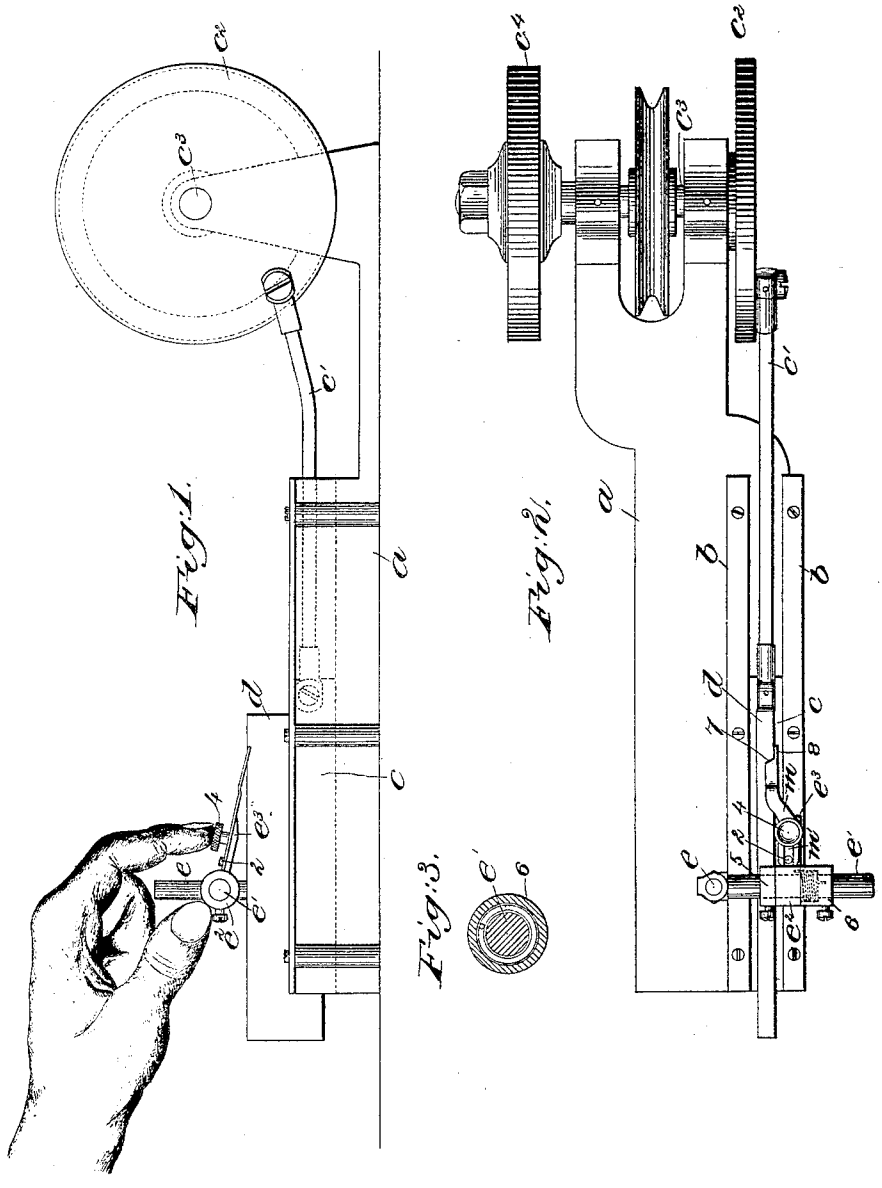
(No Model.)

W. H. REYNOLDS.

BLADE SHARPENER.

No. 453,661. Patented June 9, 1891.



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

UNITED STATES PATENT OFFICE.

WILLIAM H. REYNOLDS, OF DANVERS, MASSACHUSETTS.

BLADE-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 453,661, dated June 9, 1891.

Application filed January 27, 1891. Serial No. 379,239. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. REYNOLDS, of Danvers, county of Essex, State of Massachusetts, have invented an Improvement in Blade-Sharpeners, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention has for its object to construct a blade-sharpener especially designed for sharpening trimmer-blades for sewing-machines.

In accordance with this invention an oil-stone or equivalent abrading-surface is mounted in a suitable frame, and means are employed to reciprocate it longitudinally. A suitable support is provided in which a blade-holder is arranged, to which the blade may be adjustably secured, said support and holder being constructed and arranged to support the blade which is to be sharpened above and parallel with the oil-stone. The blade-holder is preferably pivotally connected to its support, so that it may be turned on its pivot and the blade carried by it thereby moved into and out of contact with the oil-stone.

Figure 1 shows in side elevation a blade-sharpener embodying this invention; Fig. 2, a plan view of the blade-sharpener shown in Fig. 1; Fig. 3, a cross-sectional detail to be referred to.

The main frame-work a is of suitable construction to support the operating parts.

Two parallel bars b are secured to the frame-work, having a suitable space between them to serve as a guideway for a guide-frame c. (See dotted lines, Fig. 1.)

The oil-stone d is secured to the guide-frame c. The guide-frame c is connected by a connecting rod or pitman c' with a crank-wheel c^2, secured to a shaft c^3, having its bearings in the frame-work, and to said shaft c^3 a suitable belt-pulley is secured, by which it may be rotated. I have also secured to the shaft c^3 an emery-wheel c^4, which may be used when desired. As the crank-wheel c^2 is rotated, the oil-stone d will be reciprocated longitudinally.

A post e is erected on the base of the frame-work, to which an arm e' is attached, which constitutes a support for the blade-holder.

The blade-holder comprises a hub e^2, mounted loosely on said arm e', having a projection e^3, provided on its upper side with a pin 2, and also provided with an internally-screw-threaded hole which receives a set-screw 4. The hub e^2 is held in place on the arm e' by two collars 5 and 6, one at each side of the hub, which collars are secured to the arm e' by set-screws in any usual manner. One of the collars—as 6, for instance, (see Fig. 3)—is recessed and contains a spring which spirally encircles the arm e', one end of which spring is secured to the collar 6 and the other end to the hub e^2, the tendency of the spring being to normally keep the arm or projection e^3 in elevated position.

The trimmer-blade which is to be sharpened and for which this apparatus is especially designed is of well-known make, and has a shank portion m, slotted at its rear end, as at m', and provided at its opposite end with a cutting-edge 7 and a projection 8. This trimmer-blade is fastened to a blade-holder by the set-screw 4, which passes through the slot m' and enters the arm e^3, and said trimmer-blade is prevented from turning on its holder by the pin 2, which passes up through the slot m'.

The trimmer-blade having been secured to the blade-holder in the manner described or otherwise, by pressing upon the set-screw 4, as represented in Fig. 1, the blade is depressed against the action of the lifting-spring until the cutting-edge 7 of the trimmer-blade comes in contact with the oil-stone, which latter is being reciprocated longitudinally, as described. By this means the trimmer-blade may be sharpened.

Instead of employing my device for sharpening trimmer-blades, as herein shown, I may employ it to sharpen other forms of blades.

The upper side of the projection e^3 in practice is slightly tipped over laterally from a true horizontal plane to correspond with the usual bevel of that part of the blade just at the rear of the cutting-edge, so that the established bevel of the blade will always be maintained, notwithstanding it is gradually sharpened.

I claim—

1. In a blade-sharpener, the oil-stone and means to reciprocate it longitudinally, com-

bined with a post provided with an arm e' to form a support for the blade-holder, and the blade-holder comprising a hub mounted loosely upon said arm, a projection e^3 on said hub, provided with a pin 2 and set-screw upon its upper side, and collars on each side of said hub, secured to the arm e', substantially as described.

2. In a blade-sharpener, the oil-stone and means to reciprocate it longitudinally, combined with a post and its arm e' to form a blade-holder support, and the blade-holder comprising a hub mounted loosely upon said arm, a projection e^3 on said hub, provided with a pin 2 and set-screw on its upper side to hold the blade, and collars 5 6 on each side of said hub, secured to the arm e', one of said collars being recessed to contain a spring encircling the arm, one end of said spring being secured to the collar and the other to the hub to normally elevate the projection, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. REYNOLDS.

Witnesses:
GEO. W. GREGORY,
ANNIE S. WIEGAND.