(No Model.)

F. J. REINHOLD.

KNIFE SHARPENER.

No. 343,852. Patented June 15, 1886.

Fig. 1.

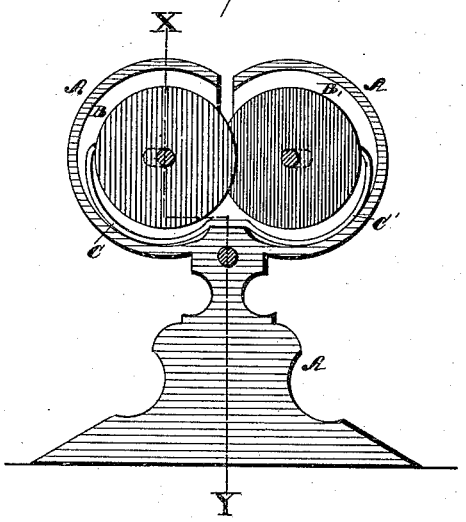
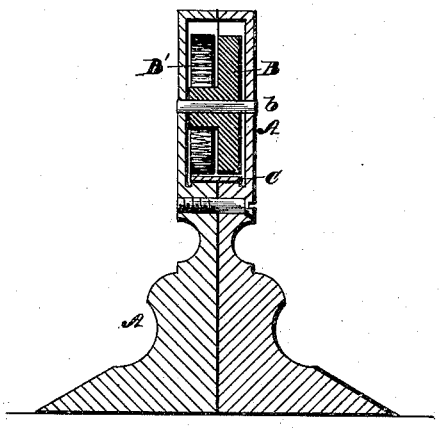


Fig. 2.



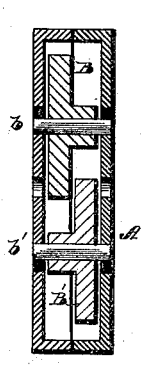


Fig. 3.

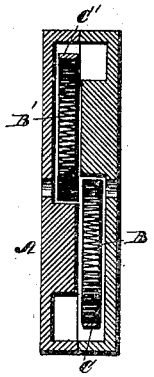


Fig. 4.

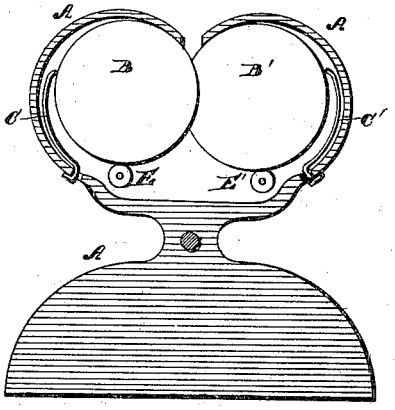


Fig. 5.

WITNESSES

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FRANK J. REINHOLD, OF DETROIT, MICHIGAN.

KNIFE-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 343,852, dated June 15, 1886.

Application filed June 6, 1885. Serial No. 167,869. (No model.)

To all whom it may concern:

Be it known that I, FRANK J. REINHOLD, of Detroit, county of Wayne, State of Michigan, have invented a new and useful Improvement in Knife-Sharpeners; 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 pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in knife-sharpeners; and it consists, essentially, of two metallic sharpening-rolls supported in a suitable frame, said rolls having a yielding connection in the support and provided with means for partially revolving the same at each engagement of the knife with said rollers to present a fresh surface to the knife, as more particularly hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a transverse section of a device embodying my invention. Fig. 2 is a vertical section along the line *x y*. Fig. 3 is a horizontal section. Fig. 4 represents a modification of the device. Fig. 5 is an end elevation of the same, partly in section.

I carry out my invention as follows:

A represents any suitable support.

B B′ represent sharpening-rollers. As shown, the rollers have a lateral yielding engagement with the frame. For this purpose the frame or case may be provided with elongated slots or bearings for the journals *b b′* of said rollers, the construction being such that when the knife is inserted between the two and comes in contact with their surfaces the force applied to the knife will at once spread the rolls a little farther apart, the distance, however, to which they are permitted to yield being controlled by the limit of the elongated slots or bearings, as when the journals have reached the outer extremities of said slots they come to a firm engagement and prevent a further yielding of the rollers, and the operation of sharpening the blade is effected.

C C′ represent springs bearing against the outer periphery of said rollers, respectively, the effect of the spring being to give a partial revolution to the rollers upon their return to normal position when the blade is removed, and thus presents a fresh surface for the next engagement of the knife. I do not limit myself, however, to this precise method of engaging the sharpening-rollers in the case or frame, as my invention contemplates, broadly, the yielding engagement of the rollers in the case in any desired manner by which a partial revolution of the same will be accomplished at or after the engagement of the blade therewith, and for this purpose the method of engagement shown in Fig. 4 may be employed, if desired, in which the rollers are engaged in the case without journals in such a manner that the rollers may yield laterally and be returned to their normal positions by the springs, as before described. In this case additional rollers, E E′, may be provided, bearing against the sharpening-rollers in such a manner as to cause a frictional contact and partial rotation of the sharpening-rollers as they are caused to yield laterally by the engagement of the blade therewith and as they are returned to their normal position by the springs.

The construction shown in Fig. 4 can be made as economically as though the shafts were employed, the friction-rolls E E′ being simply the equivalent in expense of the shafts employed, as shown in Fig. 1.

The springs not only serve to return the sharpening-rollers to their normal position, but serve also to scrape the periphery of the rollers and clear them of grit.

What I claim is—

1. In a knife-sharpener, the combination, with an inclosing-case, of sharpening-rollers mounted therein, one or more of said rollers having a yielding engagement in the case, substantially as described.

2. In a knife-sharpener, the combination, with a case, of two sharpening-rollers having a lateral yielding engagement therewith and a spring acting upon said rollers to restore them to normal position and cause the rotation of said rolls, substantially as described.

3. The combination, with a case, of sharpening-rollers provided with elongated bearings and springs acting upon said rollers, the construction being such that when the blade is engaged with the rollers they may yield to

a limited extent and be restored to normal position when the blade is removed, said rollers being partially rotated by said operation, substantially as described.

4. The combination, with a case, of sharpening-rollers having a yielding engagement therewith, and friction-rolls E E', engaged therewith, substantially as and for the purpose described.

5. The combination, with a case, of sharpening-rollers having a yielding engagement therewith, friction-rolls E E', located adjacent to said sharpening-rollers, and springs acting upon said sharpening-rollers, substantially as and for the purpose described.

In testimony whereof I sign this specification in the presence of two witnesses.

FRANK J. REINHOLD.

Witnesses:
N. S. WRIGHT,
M. B. O'DOGHERTY.