No. 647,040. Patented Apr. 10, 1900.

E. A. SMITH & H. REINHART.

KNIFE SHARPENER.

(No Model.) (Application filed Nov. 21, 1898.)

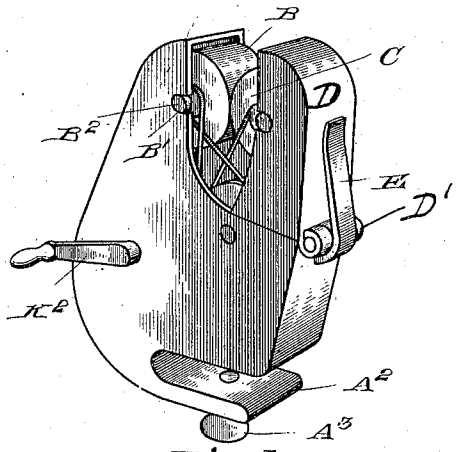


Fig. 1.

Fig. 2.

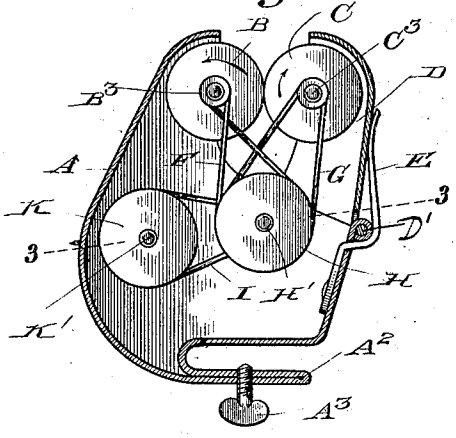


Fig. 4.

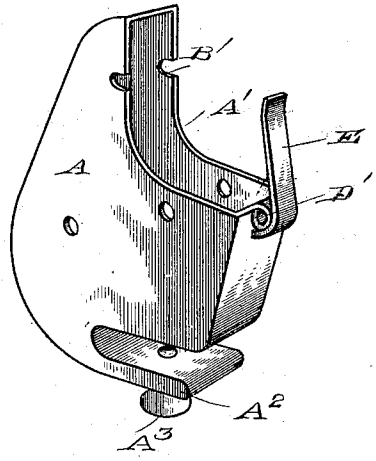
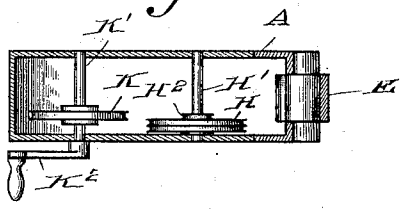


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD A. SMITH AND HENRY REINHART, OF BUTTE, MONTANA.

KNIFE-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 647,040, dated April 10, 1900.

Application filed November 21, 1898. Serial No. 697,119. (No model.)

To all whom it may concern:

Be it known that we, EDWARD A. SMITH and HENRY REINHART, residing at Butte, in the county of Silver Bow and State of Montana, have invented a new and useful Knife-Sharpener, of which the following is a specification.

This invention is a new and useful construction of knife sharpener or grinder, the object being to provide a cheap and simple device which can be easily operated for the purpose of sharpening or grinding knives, scythes, swords, and the like.

The invention consists in the peculiar construction of the various parts and their novel combination or arrangement, all of which will be fully described hereinafter and pointed out in the claim.

In the drawings forming part of this specification, Figure 1 is a perspective view of a knife-sharpener constructed in accordance with our invention. Fig. 2 is a vertical sectional view, partly in elevation. Fig. 3 is a section on the line 3 3 of Fig. 2. Fig. 4 is a detail view of the main portion of the case.

In carrying out our invention we employ a narrow metallic case A, one side of which is open and slopes or is cut away, as shown at A'. The lower part of the case is formed with a clamp-foot A^2, adapted to fit beneath a table and through which passes a clamp-screw A^3 to bind the device to the table.

A grindstone B is journaled in the upper end of the case, suitable notches B' being provided to receive the arbor or shaft B^2 of the said grindstone. A similar stone C is mounted in suitable notches in a hinged arm D, constructed of metal and of a width the same as the case A, said arm being hinged to the case at D' and normally pressed inward by a spring E, so that the grindstones B and C are raised contiguous. These grindstones are rotated in opposite directions, so that at the point of contact they move upwardly in the same direction, as indicated by the arrows, the grindstone B by means of an endless crossed belt F and the grindstone C by means of an endless belt G, said belts F and G being driven by a double pulley H, mounted upon a shaft H', journaled in the case. The shaft H' also has a smaller pulley H^2 mounted thereon, around which passes an endless belt I, driven by means of the drive-pulley K, mounted upon the shaft K' and operated by the crank-handle K^2, located on the outside of the case.

The pulleys B^3 and C^3, mounted upon the grindstone-arbors and around which the belts F and G pass, are considerably smaller than the double pulley H, so that the revolutions of the grindstones will be quite rapid. Inasmuch as they move upwardly it will be impossible for the knife or blade being ground to be drawn down between said grindstones.

Now in operation the case having the hinged arm and carrying the grindstones and operating mechanism is clamped upon the edge of a table or any suitable support, and by turning the crank in the usual manner the grindstones are revolved, and by inserting the blade to be ground between the adjacent grinding-faces of the said stones a suitable edge can be placed upon the said knife or blade. By means of the spring-arm carrying one of the rollers one is enabled to grind a very thin or thick blade and the proper positions of the grinding-stones will always be maintained.

The case A is perforated directly below the hinge, and the end of the spring is passed therethrough and riveted or otherwise secured to the case below the perforation.

It will thus be seen that we provide an extremely cheap and simple construction of knife-sharpening device.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

In a knife-sharpener, the combination with a casing the bottom of which is provided with a clamp-foot, the top is cut away on one side and notched to form bearings and the intermediate portion is provided with journal-bearings and a perforation, of a hinged arm pivotally secured to one side of the cut-away portion of the case above said perforation, and its free end is provided with notches to form bearings, a spring through said perforation, one end of which is secured to the case and the other end is in yielding engagement with said arm, grindstones journaled in the notches of the case and of the arm respectively, and operating-pulleys in said journaled bearings of the case.

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