(No Model.)

J. A. WARD.

KNIFE POLISHER AND SHARPENER.

No. 511,181. Patented Dec. 19, 1893.

Fig. 1.

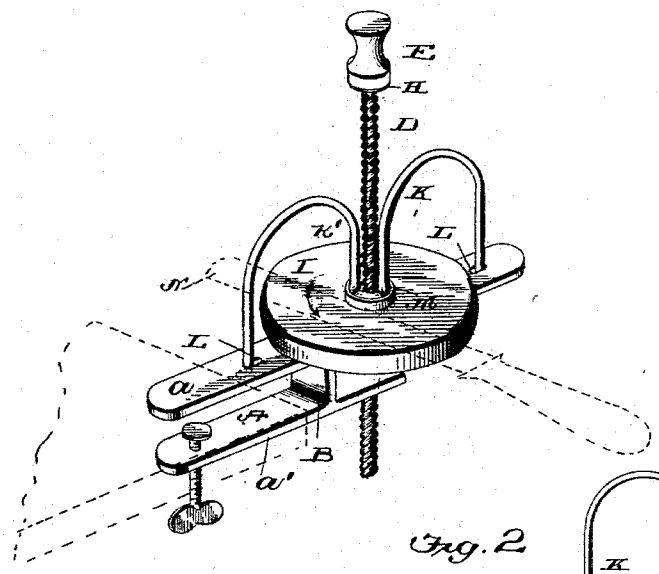


Fig. 2.

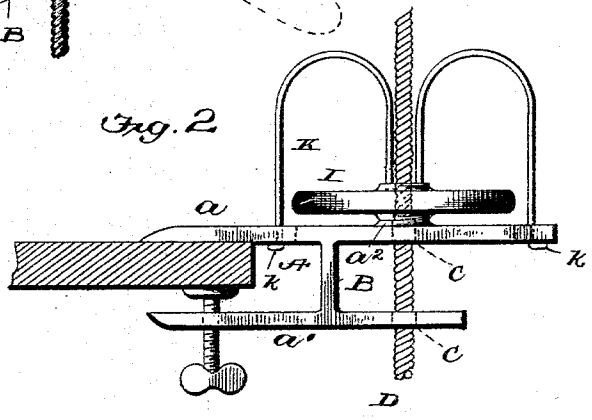


Fig. 3.

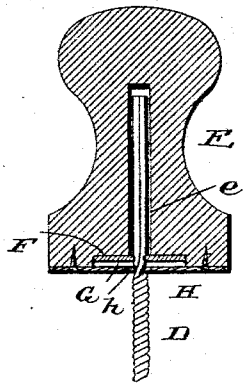
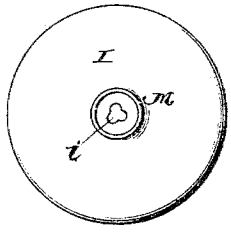


Fig. 4.



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UNITED STATES PATENT OFFICE.

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KNIFE POLISHER AND SHARPENER.

SPECIFICATION forming part of Letters Patent No. 511,181, dated December 19, 1893.

Application filed March 30, 1893. Serial No. 468,319. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. WARD, a citizen of the United States, residing at Muncie, in the county of Delaware and State of Indiana, have invented certain new and useful Improvements in Knife Polishers and Sharpeners; and I do hereby 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 appertains to make and use the same.

My invention relates to certain improvements in knife polishers and sharpeners and has for its object to produce a simple, effective and economical polisher and sharpener which can be readily and easily operated and will effectually accomplish the object for which it is designed.

My said invention consists in certain novelty in the construction, arrangement and combination of the various parts of the same all of which I will now proceed to point out and describe reference being had to the accompanying drawings, in which—

Figure 1 is a perspective of my said invention; Fig. 2 a side elevation partially in section, and Fig. 3 a detail of the handle or knob.

Referring to said drawings, A indicates a bracket consisting of two parallel horizontal arms a, a', united by a vertical cross bar B. In one end of the lower arm is mounted a clamping screw by means of which the bracket may be secured to a table, shelf or other support. The upper arm a on the side of the bar B opposite from the set screw, is extended beyond the lower arm a'.

C, C, are apertures or bearings formed in the arms a, a', said bearings registering with each other.

D is a reciprocating spiral or screw shaft or plunger. Said plunger is preferably formed of three strands of wire twisted as shown, but may be made of solid metal with a spiral formed upon same. The shaft or plunger passes through the apertures or bearings C which are of sufficient size to permit said shaft to move freely through the same. The upper end d of the shaft or plunger is formed smooth as shown.

E is a knob or handle mounted upon the upper end of the shaft and provided with a longitudinal central bore or opening e in which the smooth upper end is seated. Said bore is of sufficient size to permit the smooth end of the shaft to revolve therein. The bottom of the handle is provided with a circular countersink F.

G is a circular cap or flange rigidly secured to the shaft at the lower end of its smooth portion. Said cap is located in the countersink.

H is a plate secured to the bottom of the knob over the cap or flange and is provided with a central opening h, through which the shaft passes. Said plate in connection with the cap or flange G holds the shaft or plunger in the knob when drawn up, but permits the same to revolve therein as it is drawn up.

I is a polishing and grinding wheel formed of emery or other suitable substance. Said wheel is mounted upon a raised portion a^2 of the arm a, and is provided with a central aperture i, conforming in configuration to the cross section of the spiral or screw shaft or plunger and through which said shaft or plunger passes. Said wheel is held in position upon the upward movement or stroke of the shaft by a spring K, consisting preferably of a single piece of spring wire the ends of which pass through slots L in the arm a on each side of the emery wheel and are bent outwardly at k. Said ends k engage with the under side of the arm and serve to hold the spring in place but allow it to be readily moved by compromising the spring. Said spring wire is then bent up and downwardly at its center and curved outwardly at k' engaging a recess or groove M in the face of the wheel. While this form of spring I prefer it is obvious that any other suitable spring may be employed.

The grinding and polishing wheel is reversible so that both faces may be used.

N in dotted lines indicates a knife showing the portion of the same when being polished and sharpened.

From the above description the operation of my invention will be readily understood. The shaft or plunger is shown up, and the knife placed upon the grinding and polishing wheel. By pressing upon the knob the frictional contact of the cap or flange with the bottom of the countersink holds the knob and shaft rigidly together preventing the shaft from turning, as it is forced down through the aperture

in the grinding wheel the threads of the spiral or screw causing the wheel to revolve in the direction of the arrow. When the plunger or shaft is drawn up the shaft is free to revolve in the knob and the wheel when in use always caused to revolve in one direction.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a knife polisher and sharpener, the combination with a bracket and a reciprocating spiral or screw shaft or plunger mounted on said bracket, of a polishing and grinding wheel mounted upon the bracket, a retaining spring engaging the wheel and a central aperture in said wheel, conforming in configuration to the cross section of the shaft or plunger, through which said shaft or plunger passes, all constructed, arranged and operating, substantially as shown and described.

2. In a knife polisher and sharpener, the combination with the bracket, A, the reciprocating spiral or screw shaft or plunger D, mounted on the bracket and having the smooth end *d* and cap or flange G, the knob E having the central bore *e* and countersink F and in which the end *d* and the cap or flange G are located, and the retaining plate H, of the polishing and grinding wheel I mounted on said bracket, the retaining spring K engaging the wheel and the central aperture in said wheel conforming in configuration to the cross section of the shaft or plunger and through which said shaft or plunger passes, all constructed, arranged and operating, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES A. WARD.

Witnesses:

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BEN STARNEL.