(No Model.)

A. PAYNE.

RAZOR SHARPENER.

No. 345,723. Patented July 20, 1886.

FIG. 1.

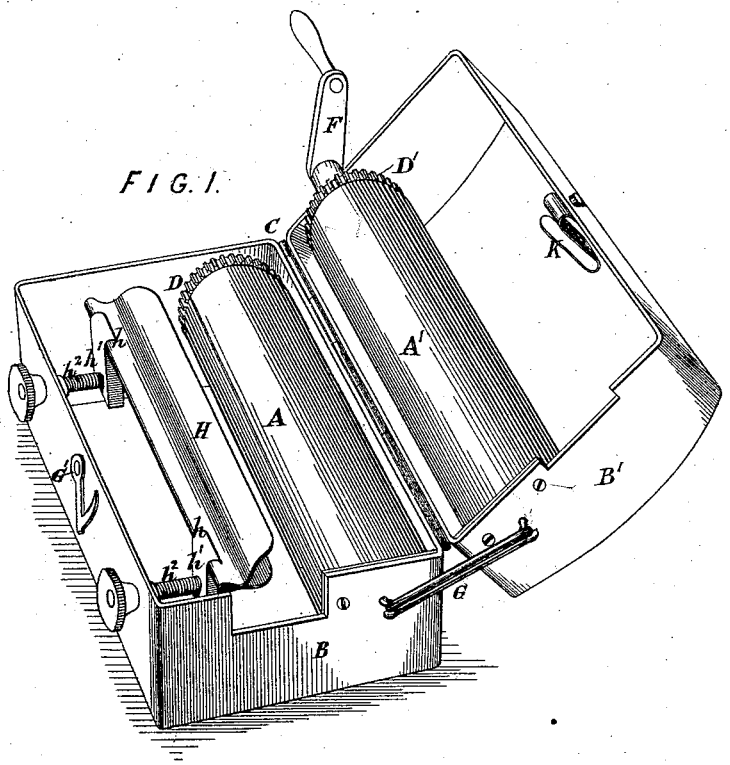
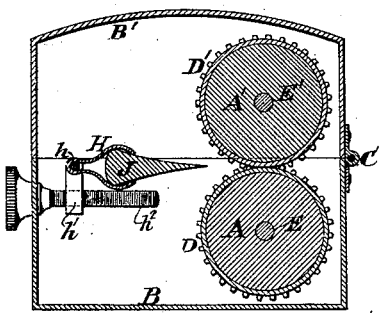


FIG. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

ALEXANDER PAYNE, OF WALTON-UPON-THAMES, COUNTY OF SURREY, ENGLAND.

RAZOR-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 345,723, dated July 20, 1886.

Application filed March 30, 1886. Serial No. 197,143. (No model.) Patented in England May 10, 1882, No. 2,189.

To all whom it may concern:

Be it known that I, ALEXANDER PAYNE, a subject of the Queen of Great Britain and Ireland, residing at Walton-upon-Thames, in the county of Surrey, England, have invented a new and Improved Razor-Sharpener, (for which I have obtained a patent in Great Britain bearing date the 10th of May, 1882, No. 2,189,) of which the following is a specification.

My invention relates to apparatus for grinding, sharpening, or buffing the blades of razors, knives, and similar instruments. It pertains to such apparatus of the class wherein are employed two revolving buffing or grinding rollers or cylinders geared together and receiving the edge of the blade to be ground or sharpened between them. The two sides of the blade are thus acted upon simultaneously, whereby time is economized, and, further, the grinding, sharpening, or buffing surface, being convex, coincides more or less with the concave lateral surfaces of the blade, when a hollow-sided blade—such as a razor—is being acted upon, thus imparting to the blade a finely-tapered edge, instead of an undesirably obtuse wedge shape, such as is the result of sharpening it on a flat surface.

My invention introduces certain improvements in the construction and operation of apparatus of this class, rendering them more convenient, and attaining a more perfect operation than heretofore, so that their use requires no special skill on the part of the operator.

My improved apparatus is represented in perspective in Figure 1 and in transverse section in Fig. 2. It comprises a pair of rollers, A A′, covered with leather or other suitable buffing material. These rollers are mounted in bearings in the ends of the casings or frames B B′, the latter being hinged together at the point C. The rollers A A′ are respectively provided with toothed or friction wheels D D′, and are mounted on spindles E E′, the spindles, rollers, and toothed wheels being so arranged in the casings that when the casing B′ is turned about its pivot or hinge C, so as to bring the open parts of the two casings together, the exposed surface of the roller A′ arrives in contact with that of the roller A, the toothed or friction wheel D′ at the same time gearing with its corresponding wheel, D. To one of the spindles E or E′ the crank-handle F is applied, by means of which the roller A′ and, through the intervention of the gearing, the roller A are rotated.

G is an india-rubber band at either or each end of the apparatus for drawing the two casings together and insuring the wheels D D′ remaining in gear, and, further, for producing a certain pressure between the rollers A A′ and the sides of the blade under treatment. It is, however, obvious that springs or other mechanical devices—such, for instance, as the fastening G′, might be substituted for the india-rubber band or bands, such as G.

H is a blade-holder suitably shaped for grasping the back or thickest portion of the blade to be operated on, while the edge or thin portion of the blade is at liberty to project through the longitudinal slit in the side of the holder toward the rollers. The holder is capable of moving toward or from the rollers, being provided with suitable guides to direct its movement. I prefer to construct the guides to propel the holder back or forth, as well as to guide it, which I accomplish by employing screw-studs as guides.

The holder H is hinged at *h h* to nuts or carrying-pieces *h′ h′*, these being mounted on screw-studs h^2 h^2, having bearings in the front of the casing B. By means of the screw-studs h^2 h^2 the position of the blade-holder H and of the blade is capable of adjustment toward or away from the point of contact between the rollers A A′. The screw-studs engage the blade-holder at or near its opposite ends. The blade-holder may thus be adjusted at one end, to some extent, independently of the other, thus bringing one end or portion of the blade farther between the rollers than the opposite end or portion. The blade-holder H is capable of being turned about its pivot *h*, the insertion or removal of the blade being thus facilitated. When the form of the blade being operated upon is such as to render the use of a different sized or shaped blade-holder desirable, substitution with this object can be readily accomplished, the screw-studs h^2 h^2 be-

ing rotated until the carrying-pieces h' h' become disengaged from the extremities of the said screw-studs.

K is a clip, in which the handle F may be fastened when not in use.

The rollers A A′ are also capable of substitution for others provided with buffing-surfaces of a different character, according to the nature of the effect required to be produced.

The action of the apparatus is as follows: The razor or other blade is inserted endwise in the blade-holder H and slid forward, the edge of the blade meantime projecting through the longitudinal slit in the said holder. The position of the blade-holder having, by means of the screw-studs h^2 h^2, been properly adjusted, the edge of the blade lies with a portion of its under surface in contact with the upper surface of the roller A. The casing B′ is then turned upon its pivot C, and the roller A′ is brought down upon the upper surface of the blade, the wheel D′ gearing with the wheel D, while the spring band or bands, (such as G,) or equivalent device, operating to draw the casings B B′ together, cause the rollers A A′ to be pressed against the blade laterally, and at the same time put the wheels D D′ in gear with one another. Upon the crank-handle F being now operated, a grinding, sharpening, or buffing effect is produced simultaneously upon both sides of the blade, and when a hollow-sided blade is under treatment the direction of such action coincides more or less with that of the concave sides of the blade. It may be explained that the position of the blade J (represented in Fig. 2) is not such as would be occupied by it while under treatment in the manner described, the blade and blade-holder being shown in that figure retracted, in order to avoid confusion in the drawings.

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

1. The improved apparatus for grinding, sharpening, or buffing razors or other cutting-blades, consisting of a pair of rollers geared together, two frames or casings hinged together, one of said rollers being mounted in bearings in one of said frames or casings, and the other of said rollers being mounted in the other of said frames or casings, substantially as set forth, whereby when the frames or casings are opened the rollers are separated, and when the frames or casings are closed together the rollers approach each other, and, gearing together, are adapted to operate upon opposite sides of the blade to be sharpened.

2. The combination of a pair of rollers geared together, two frames or casings hinged together, with bearings for the respective rollers in said frames, respectively, whereby when the frames or casings are opened the rollers are separated, and a blade-holder adapted to hold the blade to be sharpened between the two rollers, substantially as set forth.

3. The combination of an upper and a lower frame or casing hinged together, two rollers geared together and having bearings in said frames, respectively, whereby when the upper frame is turned up it carries the upper roller away from the lower roller, and a blade-holder mounted on the lower frame and adjustable toward and from the rollers, substantially as set forth.

4. The combination of an upper and a lower frame or casing hinged together, two rollers geared together and having bearings in said frames, respectively, whereby when the upper frame is turned up it carries the upper roller away from the lower roller, a pivoted blade-holder adapted to hold the blade between the two rollers, or to be turned up vertically, and guides for said holder connected to the lower frame and adapted to permit the adjustment of the holder toward or from the rollers, substantially as set forth.

5. The combination of two frames or casings hinged together, two rollers geared together and having bearings in said frames, respectively, a blade-holder adapted to hold the blade to be sharpened between the two rollers, and two adjusting-screws engaging said holder at or near its opposite ends, and adapted to adjust its ends independently toward or from the rollers, substantially as set forth.

6. The combination of frames or casings B and B′, hinged together, rollers A and A′, having bearings in said frames, respectively, gears D and D′, screw-studs h^2 h^2, having bearings in frame B, carrying-pieces h' h', engaging said screws, and blade-holder H, hinged to said carrying-pieces, substantially as set forth.

7. The combination of a pair of rollers geared together, two frames or casings hinged together, with bearings for the respective rollers in said frames, respectively, a blade-holder adapted to hold the blade to be sharpened between the two rollers, and a spring or springs engaging said frames and pressing the frames and rollers together when the frames are closed, substantially as set forth.

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

ALEXANDER PAYNE.

Witnesses:

ARTHUR W. MCLELLAN,

SYDNEY CLARKE HOOK.