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I. M. SLEPICKA
SHARPENING DEVICE

1,963,563

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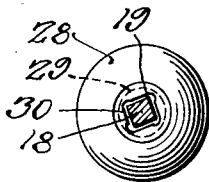
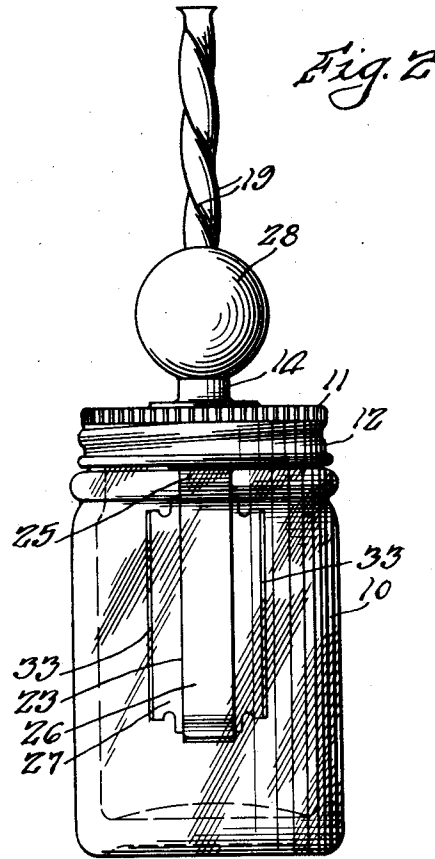
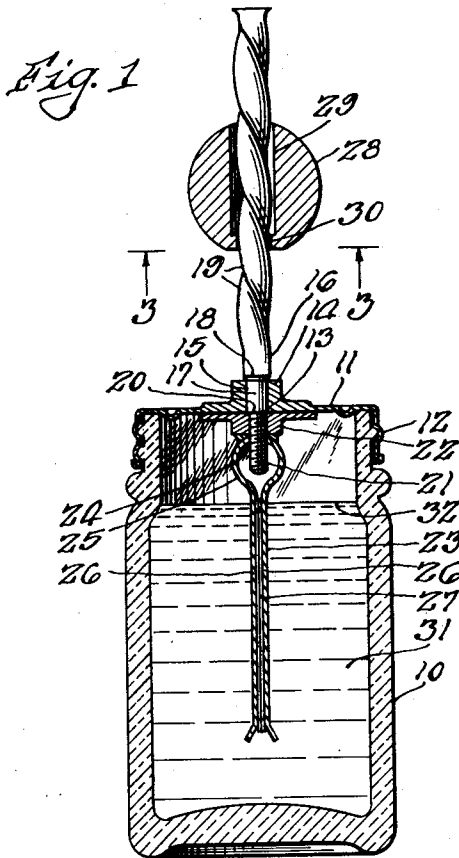


Fig. 3

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SHARPENING DEVICE

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2 Claims. (Cl. 51-7)

The hereinafter described invention has to do with the sharpening of cutting blades and relates particularly to a device which takes advantage of the erosive qualities of water.

It is the principal object of the present invention to provide a means and process for sharpening blades by movement through liquids such as water.

It is also an object of the present invention to provide a simple and inexpensive device which will place a very thin edge evenly and coextensively with the length of a blade.

Another object of the present invention is to provide a means for rotating a blade in alternate directions within a body of liquid causing the edges of the blade to be abraded on either side by the liquid.

Another object of the present invention is to take advantage of the abrasive action of any microscopic particles which may be suspended in liquid.

Still another object of the present invention is to provide a means whereby a blade may be moved within a body of liquid to cause the development of considerable pressure between an edge of the blade and the liquid with a resulting sharpening effect upon the blade.

These objects, and other desirable objects as are hereinafter set forth in this specification, are obtained by the unique arrangement, improved construction and novel combination of the parts constituting the invention, one form of which is illustrated in the accompanying single sheet of drawing hereby made a part of this specification, and in which:

Figure 1 is a diametric section of a device embodying the invention;

Figure 2 is an elevation of the device shown in Figure 1; and

Figure 3 is a transverse sectional view of the stem of the device taken at the line 3-3 of Figure 1.

The same reference numerals indicate identical parts of the device throughout the following description and in the drawing.

The lower part of the device comprises a jar 10 shown in Figures 1 and 2. The jar may be made of glass and be transparent. It may be of any selected size or shape. To the top of the jar is secured a lid 11 by means of threads 12. Other means for securing the cap may be employed. Centered within the top of the lid or cap 11 is an aperture 13. Seated about the aperture 13 is a flanged bearing block 14 con-

taining a bearing 15 in registry with the aperture 13.

A stem 16 at a bearing surface 17 is rotatively mounted within the bearing 15 and the aperture 13.

Above the bearing surface 17 is a shoulder 18. Ribs or corners 19 progress in the fashion of a spiral from the shoulder 18 to the top of the stem. In the present instance there are four of the ribs 19 formed by the four longitudinal corners of the stem. The stem is twisted by torsional forces applied at opposite ends thereof and in opposite directions to produce the spiral effect of the corners 19. At any transverse section of the stem 16 such as the section 3-3, shown in Figure 3, will be substantially square.

A shoulder 20 is at the lower end of the bearing 17, and below the shoulder 20 the stem 16 is threaded to its extreme lower end. The threads at the lower end of the stem 16 are designated by the numeral 21.

To a flanged nut 22 is soldered or otherwise secured the end of a clamp member 23. The upper end of the clamp 23 contains an aperture 24 alining with the threaded aperture within the nut 22 for receiving the end of the stem 16 which projects beyond the nut 22.

Shoulder 20 serves as a stop for the nut 22 and prevents the latter from being drawn tightly against the under side of the cap 11 when rotated into place upon the stem. The upper end of the clamp 23 is rolled into a loop 25 which serves as a spring for urging the lower opposed members 26 together. The members 26 impinge against a blade 27 which is placed therebetween in the manner shown in Figure 2.

Upon the upper part of the stem 16 is disposed a handle 28 which configures substantially a ball. A recess 29 is drilled or otherwise formed within the body of the handle 28, and has in the bottom thereof an aperture 30 conforming to a transverse section of the spiralled portion of the stem 16. In the present device, since the stem 16 above the shoulder 18 is square in cross section, the aperture 30 is likewise square.

When it is desired to sharpen a blade 27, the cap 11 is screwed from the jar 10 and the blade inserted between the compressing members 26. Water 31 or other liquid may be then or previously placed within the jar 10 to reach to a level 32, which will be at the same or at a greater elevation than the top of the blade 27 when the cap is replaced upon the jar. The cap being replaced upon the jar and the blade 27 immersed within the water, the handle 28 is

grasped by the fingers firmly to keep it from rotating while it is moved longitudinally of the stem 16. Movement of the handle 28 downwardly of the stem 16 will cause said stem to rotate in a clockwise direction as viewed from above.

While the handle 28 is being progressed downwardly of the stem, the weight of the stem and the vertical component of force applied to the handle 28 are absorbed by the thrust of the shoulder 18 against the upper face of the bearing block 14. A subsequent retrogressive movement of the handle 28 upwardly causes the sides of the aperture 30 to bear oppositely against the ribs 19 of the stem 16 to cause the stem to turn in a counter-clockwise direction as viewed from above, and hence to cause the clamp 23 and the blade 27 to rotate in a counter-clockwise direction. Displacement of the stem 16 upwardly in concert with the handle 28 is precluded by the nut 22 pressing against the lower side of the cap 11.

Turning of the blade 28 about an axis therein and common to the axis of the stem 16, presses the sides of the blade against the water 31 and tends to throw the water by centrifugal force to the side of the jar. As the water is thus thrown radially of the axis about which the blade is caused to rotate, it brushes against the sharpened edges 33 of the blade and acts as an abrasive. When the handle 26 has reached one of its limits of motion to have caused the water and microscopic particles therein (if any) to have abraded one side of the edges of the blade, the handle is then reversed in its motion to reverse the direction of rotation of the blade 27 to abrade the opposite sides of the blade edges. Reversing the directions of rotation of the blade, in addition to sharpening the edges of the blade along either side, prevents the water within the jar from building up a current to flow with the

blade and at the same speed so that there is always a movement of the blade relative to that of the water.

Although the liquid used within the jar has been described as water, the applicant does not desire to have his device limited to the use of water, it being conceivable that any liquid may serve as well.

The blade holding means may be modified to hold any other blade, whether one edged or two. Likewise the means for rotating the blade holder is but one of many forms which such blade holder rotating means may take.

What is claimed as new and is desired to be secured by Letters Patent of the United States is:

1. A razor blade sharpening device comprising a jar to receive a liquid, a cap for said jar and provided with a bearing therein, a shaft journaled for rotation in said bearing and having a section external of said cap and an extension internal thereof, elongated blade clamping jaws depending from said extension in alinement with said shaft and grasping a blade longitudinally of its cutting edge with such cutting edge parallel to the axis of said shaft, and means upon the external portion of said shaft for rotating said shaft.

2. A razor blade sharpening device comprising a jar to receive a liquid, a cap for said jar and provided with a bearing therein, a shaft journaled for rotation in said bearing and having a section external of said cap and an extension internal thereof, elongated blade clamping jaws depending from said extension in alinement with said shaft and grasping a blade longitudinally of its cutting edge with such cutting edge parallel to the axis of said shaft, and means upon the external portion of said shaft for rotating said shaft first in one direction and then in the other direction.

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