This invention relates to sharpeners for knives and like cutting instruments, and has for its object to provide a hand-held appliance with both a bevel-defining sharpening device and a honing element, said bevel-defining device being situated at a position convenient for use when the appliance is held with the extremity of the honing element resting on a table or like surface. The features of the invention provide for enabling opposed sharpening parts of the bevel-defining device to be adjusted with respect to each other for dealing with knives or the like of different sizes and for distribution of wear on said operative parts, and/or to enable the appliance to be used to equal advantage by both right-handed and left-handed persons.

According to the invention, there is provided a sharpener for the blades of knives and like cutting implements comprising a honing rod provided at the handle end with opposed radially disposed sharpener elements forming between opposed edges a bevel-defining groove adapted for sharpening a knife edge drawn therethrough.

In carrying out the invention, the said elements are mounted on the rod for relative angular adjustment so that right or left-hand sharpening can be effected or different knife edges can have the required bevel applied thereto.

Preferably a group of three such elements are provided, one element being fixed to said rod, and the other pair being carried by a disc in spaced-apart relation to either side of the fixed element, said disc being angularly adjustable on the rod to provide for engaging one or other of the pair of elements with the fixed element as may be required for right or left-hand sharpening.

The honing rod may be a steel of typical characteristics for sharpening, and preferably of a polygonal cross-section so that different surfaces can be presented to the knife edge after sharpening in the bevel-defining groove made by the sharpener elements.

A guard plate may be associated with the angularly adjustable elements and provide an indicator for cooperation with the fixed element or to enable the bevel-defining device or rod to be set for sharpening or honing.

According to a feature of the invention, a sharpener device for the blades of knives and like cutting implements is provided with a bevel defining means at a position where the root end of a honing rod is adjacent to the front end of a handle disposed co-axially with respect to said honing rod, the honing rod being rigidly carried by said handle, the said bevel-defining means comprising opposed sharpener ribs mounted substantially radially and preferably with relative angular adjustment with respect to the axis of the handle and rod so as to assume with respect to each other an angle corresponding to the required bevel angle for the blade of the knife or the like to be sharpened, so that sharpening can be carried out by drawing the blade edge through said bevel-defining means, and then stroking the opposite bevel faces of the blade edge in turn across the honing rod. The bevel-defining ribs are made of such a substance as to true-up the blade bevel by the use of such device, said ribs preferably being made of steel. These ribs may be formed as projections of individual mounting discs assembled on a stem where the honing rod is connected to the handle, one disc preferably being integral with the rod, while the other may be angularly adjustable about the said stem so that the sharpening ribs can be brought to positions in which they are relatively laterally offset to the required extent providing for separation of opposed ribs or engagement of different ribs for right and left-hand sharpening.

In order that the invention may be readily understood and carried into effect, reference will now be made to the accompanying drawings which show two embodiments thereof, and in which:

Figure 1 is an elevation with the handle partly in section of one embodiment in which there are two sharpening elements, one of which is fixed and the other is relatively adjustable thereto for laterally offsetting the elements to suit knife blades of different sizes, and to change the position at which the edge of a knife blade of given size can be applied to the elements so as to achieve some distribution of wear along the elements.

Figure 2 is a section on the line II—II of Figure 1.

Figure 3 is an exploded view looking in the direction of the arrow III in Figure 1.

Figure 4 is an axial elevation looking towards the handle of the second embodiment in which a single fixed sharpening element and a pair of angularly adjustable elements are employed, only the guard plate and adjustable pair of elements being shown.

Figure 5 is a plan of Figure 4, but showing the complete bevel-defining assembly.

Figure 6 is a detail showing how a sharpening element is fitted to its mounting disc, and Figures 7 and 8 are pictorial views for left and right-hand sharpening, using the sharpener of the second embodiment.

Reference will first be made to Figures 1–3.

In this embodiment a steel honing rod 1 of polygonal section (e.g. octagonal) has a fixed stem 2 of reduced diameter extending axially from its root end. On this stem there is fixed a mounting disc 3 having a radially disposed sharpening rib 4 projecting from its rear surface 5 by being a press fit in a radial groove 6 (Figure 6). Next there is fitted on said stem 2 a second disc 7 in the form of a ring capable of turning thereon. This second disc has a radially disposed rib 8 projecting from its front face 9 i.e., the face which is towards the ribbed face of the first disc 3. The two discs 3, 7 are so formed as to space apart their rib-carrying portions, for instance by providing them with laterally extending hub portions which come into contact with each other and serve as distance pieces. The mutually opposed faces 5 and 9 of the discs 3 and 7 are frusto-conically shaped to form the spacer hubs. An additional spacer ring 10, which may, as shown, be an integral part of the ribs mounting disc 3, is also preferably provided between the discs. There is next fitted on to the stem 2 a larger circular of polygonal guard plate 11 and behind this a fibre or resilient friction washer 12. A handle tube 13 is fitted on to the remaining portion of the stem 2, with an interposed spacer sleeve 14, the stem 2 having at its outer end a screw thread 15 which is engaged by a threaded socket 16 fitted integral with the handle so that the handle can be tightened up for firm clamping of the assembly of parts on the rod stem 2.

The outer faces of the ribs 4, 8 assume, when the device is assembled as shown in Figure 1, positions providing a V groove 17, the angle of which is determined by the slope of the conical surfaces 5, 9, and corresponding to the required angular relationship of the bevel of the blade to be sharpened. Innermost portions of the ribs 4, 8 overlap each other as indicated at 18, so that in each ultimate position of the angularly adjustable mounting disc 7 the rib 8 thereof will be in contact with the adjacent side of the other rib 4. It can be brought to the reverse side of
said other rib by turning the adjustable disc 7 around as far as possible before contact of the ribs again takes place. This change of position will enable the bevel-defining device constituted by the ribs to be used with equal advantage either by a right-handed or left-handed person.

The adjustable disc 7 can be turned by slackening back the handle 13, and it is secured in the new position by tightening up again the said handle. This not only allows one rib to be brought to opposite sides of the other rib as aresaid, but as regards each of these dispositions the rib 8 of the adjustable disc can be set at any desired position spaced from the other rib 4 as appropriate for sharpening a large knife or to allow the position at which the blade attacks the ribs to be altered, thereby to distribute the wear along said ribs to some extent. The guard plate may be located angularly with respect to the adjacent rib mounting disc 7 by means of a pin 19 which fits into a hole 20 in the plate 11.

The honing faces 21 of the rod 2 may be slightly roughened to improve the sharpening effect by honing across said rod. In this case the edges 22 where the faces meet will in consequence have a slightly roughened form.

In using the appliance, the pivoted end 23 of the steel handle 1 is rested on a table or shelf, and the handle 13 raised until the device takes an angle of about 20 degrees to the table or shelf; the blade of a knife or the like is drawn through the gap 17 between the sharpening discs 4, 18 to restore an accurate bevel. The blade is then honed on a face 22 of the rod 1. When re-sharpening is necessary it is not essential to use the bevel-defining device unless the bevel condition so demands; so long as the bevel remains in good condition it will be found sufficient to draw the blade over an edge of the rod 22, a keen blade edge being maintained in this way.

Should the occasion arise, the honing rod can be readily returned to its original condition by grinding the faces thereof.

In the embodiment of Figures 4 to 6, the general construction and arrangement of the sharpening device is similar to that of Figures 1-3, but instead of two sharpening ribs 4 and 8, there are now a group of three ribs 4, 24, 25, which facilitates the use of the device by a right or left-hand person as the case may be, and gives a guide for honing the sharpened knife on the surface 21 of the rod 1.

The mounting disc 3 with its single rib 4 is as before, and the adjustable disc 7a is provided with the two laterally spaced ribs 24 and 25, the ribs all being generally radially disposed but substantially parallel when the centre fixed rib 4 is in the vertical position VP of Figure 4. On the guard plate 11a at this vertical position is designated by a maker’s line (Honé), there being provided on either side thereof at equally spaced intervals, marker lines RH and LH the marker RH being angularly spaced from the rib 24 and the marker LH similarly spaced from ribs 25 with the hone marker at the centre, this disposition being held by the pin and slot connection 19, 20 which holds the assembly of disc 1a and guard plate 11.

For sharpening a knife blade KB (Figure 7 or Figure 8) in the V-bevel-defining groove 17 between a pair of opposed ribs as in Figure 1, the handle 13 is loosened to release the disc 7a, which is then turned (see Figure 4) with the guard plate 11a until the right-hand radial edge of the rib 24 engages the left-hand edge of the fixed single rib 4. The handle 13 is then tightened, and with the point 23 of the honing rod 1 held in a convenient socket 26, the hone rod horizontal and the RH mark in vertical position V (Figure 4) the blade KB is drawn through the V (17) at right angles (Figure 7).

The angular spacing between RH and 24 and between LH and 25 defines a sharpening angle for a right or left-handed person as the case may be.

For honing the sharpened knife blade, the handle may again be loosened to position of adjacent portion of the guard plate 11a until the hone mark is in the vertical position with the fixed cutter rib 4 centrally between the adjustable ribs 24, 25, as shown in Figure 5. Honing in this position can be carried out by drawing the sharpened blade through the V formed by the opposed areas of these laterally spaced ribs 4, 24, 25, or by stroking the blade across the flats 21 of the hone rod 1. For convenience of setting the appropriate flat honing surface 21 in relation to the knife, one of the edges 22 of the hone rod may be arranged in line with the fixed sharpening ribs 4. Thus, when this rib is held vertical in the honing position, the adjacent flat honing surface 21 inclines downward forward, the knife-holding hand of the user is that it presents its flat surface at a suitable position for honing.

I claim:

1. A sharper device for the blades of knives and like cutting implements, comprising a honing rod having a honing portion and a stem portion forming a co-axial extension thereof at one end, opposed sharper mounting discs on said stem, one fixed at the junction between the honing and stem portions, and the other in the form of an angularly adjustable ring, conical faces extending circumferentially about said discs with the smaller ends opposed, said faces having radially disposed sharper mounting grooves, a spacer hub between the opposed small ends of said faces, opposed sharper ribs in said mounting grooves forming between any pair of ribs a bevel defining sharpening groove, a guard plate constituted as an assembly with said adjustable disc, said assembly being held by the pin and slot connection, and a pressure applying screw between the said portion and the handle tube for applying axially compressing force to lock both the handle tube and the said assembly to said stem portion.

2. A sharper device for the blades of knives and like cutting implements, comprising a honing rod having a honing portion and a stem portion forming a co-axial extension thereof at one end, opposed sharper mounting discs on said stem, one fixed at the junction between the honing and stem portions, and the other in the form of an angularly adjustable ring, conical faces extending circumferentially about said discs with the small ends in opposed relation, the face of the fixed disc having a radially disposed sharper mounting groove, and the face of the adjustable disc having a pair of said grooves one on each side of the fixed face groove, a spacer hub between the opposed small ends of said faces, sharper ribs in said mounting grooves forming between any opposed pair when in abutment a bevel defining sharpening groove, a guard plate constituted as an assembly with said adjustable disc, a handle tube axially adjustable on said stem portion at the back of said guard plate, and a pressure applying screw between the said portion and the handle tube for applying axially compressing force to lock both the handle tube and the said assembly to said stem portion, with the fixed face rib between the pair of ribs mounted on the face of the adjustable disc.

3. A sharper device according to claim 2, wherein the honing portion is provided with a plurality of longitudinal faces with longitudinal honing edges between them, one of said edges being disposed in line with the sharpening abutment on the fixed disc.

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