BLADE SHARPENING GUIDE

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Notice: The portion of the term of this patent subsequent to Apr. 11, 1989, has been disclaimed.

Filed: Mar. 15, 1972

Appl. No.: 234,861

Related U.S. Application Data

U.S. Cl. 76/82, 52/221
Int. Cl. B21k 11/02
Field of Search 51/221 R, 218, 221 BS; 76/82

References Cited
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3,654,823 4/1972 Juranitch 76/82
2,893,179 7/1959 Sperow 51/221

FOREIGN PATENTS OR APPLICATIONS
557,589 11/1943 Great Britain 51/221
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ABSTRACT

A clamp-type blade holder including blade edge angle determining bars for guiding the sharpening of a blade edge on a flat sharpening surface, such as a hone. The blade holder includes guide bars coacting with the blade edge to engage the hone and maintain the sharpening angle the same during all stroking on the hone, thereby producing an accurate sharpening angle that will enable a razor edge. The guide bars are adjustable in one embodiment to permit quick and easy change of the sharpening angle.

12 Claims, 13 Drawing Figures
This application is a continuation-in-part of my co-pending application Ser. No. 33,790, filed May 1, 1970, now U.S. Pat. No. 3,654,823.

This invention is directed to a clamp-type knife blade holder, capable of being used effectively by an unskilled person, which accurately establishes the sharpening angle for the edge of a knife blade to be sharpened on a flat surface and which enables the sharpening of a knife blade to razor edge sharpness. The blade holder is adjustable, and can be set for different sharpening angles by changing the clamping position of the blade, and for handling knife blades of various sizes. A pair of positioning or guide bars extend along each side of the holder, in the same direction as the long axis of a blade clamped to the holder to establish an identical sharpening angle on both sides of the blade edge as the blade and holder are stoked over a flat sharpening surface, such as a hone. It is not necessary to reclamp the blade during the sharpening process to sharpen both sides of the blade edge, because the blade and holder may simply be flipped over, there being bar-shaped guides on both sides of the blade holder. In one embodiment, the guides are automatically mounted so that the sharpening angle may be changed without unclamping the blade and resetting its position in the holder. The blade holder may also be used to sharpen a scissors, and a slightly modified form is useful for sharpening arrowheads. The invention further concerns the method of sharpening a knife blade by first grinding in the cutting edge on a course sharpening member at a given sharpening angle, and then grinding the cutting edge on a fine sharpening member at an increased sharpening angle.

Balde sharpeners of many designs are well known. One of these is shown in U.S. Pat. No. 1,505,678, which issued Aug. 19, 1924 to F. B. Swisher. That device comprises a simple bar for sharpening scissors, the sharpening motion being created by closing the scissors on the bar. No angle control, other than that built into the scissors, and no blade holder are provided by the Swisher tool.

U.S. Pat. No. 1,152,321, which issued Aug. 31, 1915 to R. E. Kimball, describes a blade sharpener which does include a blade holder. However, Kimball's apparatus is used in combination with a holder which carries a pair of rotatable sharpening steels. The blade holder and the holder for the sharpening steels are interconnected by means of a frame, so that the angle of the rotating steels can be fixed relative to the blade. In addition, the apparatus must be secured to a table or similar support to hold it in place while the hand crank of the rotatory holder is rotated.

An even more elaborate knife sharpening jig is described in U.S. Pat. No. 3,011,306, which issued Dec. 5, 1961, to J. N. Sandven, et al. The jig includes adjustable holding means for a blade, in combination with a rollers over which a sharpening file is moved.

The apparatus of the invention comprises two complementary blade clamps with interconnecting means for use on a sharpening surface. The sharpening surface can be a hone or sharpening stone, or a sharpening steel, and it is preferably flat.

The present invention is more simple than the Kimball and Sandven, et al., sharpening devices. In the instant device, it is only necessary to clamp the blade properly in the blade holding clamp, and the angle determining guide bars automatically establish the correct sharpening angle for both sides of the blade edge during each stroke on a hone. In the typical blade sharpening operation to obtain a precision sharpened blade edge, it is only necessary to move the clamped blade on the sharpening surface a sufficient number of times, with the respective side edge surfaces of the blade and the angle bars resting against the sharpening surface. However, the clamped blade may be first worked against the rough sharpening surface at a given sharpening angle and then worked at an increased sharpening angle against a fine sharpening surface.

The best mode presently contemplated of carrying out the invention is illustrated in the accompanying drawings in which:

FIG. 1 is an exploded perspective view of the knife sharpening guide of the invention;

FIG. 2 is a side perspective view of the device, showing a knife blade to be sharpened held thereby;

FIG. 3 is an end view of the device, showing the blade angle relative to the sharpening surface;

FIG. 4 is an exploded perspective view of a modified knife sharpening guide of the invention;

FIG. 5 is a side perspective view of the guide shown in FIG. 4 and showing a knife blade to be sharpened as it is held thereby;

FIG. 6 is an end elevational view of the guide of FIG. 4, showing a blade angle relative to the sharpening surface;

FIG. 7 is an exploded view of a modified sharpening guide for use in sharpening arrowheads or broadheads in accordance with the invention;

FIG. 8 is a side perspective view of the guide of FIG. 7, illustrating a broadhead clamped by the guide and ready to be sharpened;

FIG. 9 is an end view of the guide shown in FIG. 7, illustrating the broadhead angle relative to the sharpening surface;

FIG. 10 is an exploded perspective view of a modified knife blade sharpening guide according to the invention;

FIG. 11 is a perspective view of the embodiment of FIG. 10 as attached to a knife blade to be sharpened when held thereby;

FIG. 12 is an end elevational view of the device of FIG. 10 as associated with a flat sharpening surface and illustrating the movable bar guides in one position to attain a given sharpening angle for the blade; and

FIG. 13 is a view similar to FIG. 12 but illustrating the movable bar guides in a second position to provide an increased sharpening angle.

It is not possible for the average person to attain a constant relationship between a blade and sharpening surface during sharpening of a blade, and therefore the average person cannot obtain a sharpened razor edge on a blade. The present invention permits any person, whether skilled or not in sharpening, to obtain a razor sharp edge on a blade.

As shown in the drawings, a knife sharpening guide 1 includes a first blade guide clamp 2, and a second blade guide clamp 3. The guide clamps 2 and 3 each include an angle guide bar 4, to which is welded a pair of blade clamps 5, which grip and hold a knife blade 6. While the guide bars 4 are shown as being straight, it should be recognized they could also be arcuate. The first and second blade guide clamps 2 and 3 are secured
to each other by threaded bolts 7 and nuts 8. The bolts 7 each extend through openings 9 in the respective blade clamps 5. The bolt openings 6 are preferably disposed at the back portion of the clamps 5 as shown, but could be located on the opposite side of the respective guide bars 4 without impairing the function of the apparatus.

The blade clamps 5 extend at right angles relative to the respective angle guide bar 4, and each has a bent corner 10 to provide spring tension gripping action on the blade 6 to hold it firmly in the sharpening guide 1.

The position of the blade 6 in the guide clamps 2 and 3 can be adjusted to provide the desired sharpening angle, and because the guide clamps 2 and 3 are complementary, matching elements, it is not necessary to change the clamping position to sharpen the opposing side edges of the blade 6. When attaching the blade guide to a knife blade, it is positioned so that the clamps are generally centered between the ends of the blade and where about one-half inch extends between the blade edge and the clamps. Moreover, the guide bars of the holder are set generally parallel to the blade edge. The optimum sharpening angle, which is the angle between the blade and hone, in most instances, is between 15° and 20°, and the desired angle can be obtained by changing the distance D, between the blade edge and the bar 4.

Once the blade 6 has been clamped into the knife sharpening guide 1, it is not necessary to unclamp and reclamp it during the sharpening operation. The fifteen degree angle is automatically established for both sides, thereby providing a total angle between the planes of the sharpened blade edges of thirty degrees. The sides of the guide clamps 2 and 3 may be marked with desired settings as to positioning of the blade clamps relative to the knife blade for a plurality of blade sizes to facilitate consistent placement of the blade relative to the guide.

Sharpening surface 11 is a sharpening stone, commonly called a hone, or a sharpening steel, and it is preferably flat. The sharpening action is accomplished by holding either blade edge 12 of blade 6 and the corresponding angle guide bar 4 against the sharpening surface 11, and drawing the blade 6 along this surface 11 with a wiping action by moving the blade in a direction with the blade edge leading while maintaining the guide bar in engagement with the hone. This motion is repeated, until the respective edges 12 are sharp.

The device has particular utility in meat processing, where the intuitive skill connected with the manual sharpening art is becoming rare. No period of training or apprenticeship is necessary to become an "expert" blade sharpener. Any supermarket employee or sportsman who can follow simple instructions can obtain a correctly sharpened edge at first attempt.

Referring now to the embodiment of FIGS. 4 to 6, a modified knife sharpening guide and the preferred embodiment, generally indicated by the numeral 20, is illustrated and differentiates from the embodiment of FIGS. 1 to 3 only in the structural details. The guide of this embodiment includes a pair of substantially identical frame members 21 and 22, adapted to be arranged together in mirror relationship to clamp the knife 6, so that it may be sharpened on the sharpening surface 23a of a sharpening stone or steel 23.
The sharpening guide of the invention can also be used to sharpen other cutting edges in addition to knives. For example, the blade members of arrowheads, sometimes called broadheads and used by archers, may be readily sharpened by using the sharpening guide of the invention in combination with a flat sharpening surface, as shown in the embodiments of FIGS. 7 to 9. The sharpening guide of this embodiment is generally designated by the numeral 40 and differs from the guide of FIGS. 4 to 6 only in the length of the clamping fingers so as to facilitate the clamping to a broadhead 42 in a desired fashion.

The broadhead guide and holder 40 includes frame members 41 and 42 which are the mirror image of each other. The heads of the frame members are channel-shaped to define a base for clamping fingers 41a and 41b, and to define means for maintaining the broadhead edge being sharpened at a constant angle relative to the sharpening surface during the sharpening operation.

The head of frame member 41 includes a wall 41c coplanar with the clamping fingers 41a and 41b, a guide wall 41d substantially parallel to the wall 41b and spaced outwardly therefrom, and a connecting wall 41e. Similarly, the frame member 42 includes walls 42c, 42d and 42e.

While the sharpening guide of FIGS. 4 to 6 may be used to sharpen a broadhead, it will be appreciated that the sharpening guide 40 where clamping fingers 41a and 42a are longer than clamping fingers 41b and 42b, facilitate clamping of the broadhead in the fashion shown in FIG. 8 to generally place the broadhead edge in parallel relationship to the guide bars. For the same reason, the free edges of the clamping fingers of each frame member are formed at an incline relative to the longitudinal axis of the head or guide bar.

As the embodiment of FIGS. 4 to 6, cap screws 43 and 43a freely received in holes 44a and 44b of clamping fingers 41a and 41b, and threadedly received in tapped holes 45a and 45b of clamping fingers 42a and 42b, serve to selectively move the frame members 41 and 42 toward and away from each other into clamping and unclamping positions. The heads of cap screws 43 and 43a bear against the outer surface of clamping fingers 41a and 41b during the clamping or a broadhead between the coating fingers of each frame member.

Inasmuch as the thickness of all broadheads cannot be expected to be the same, and the best clamping action attainable is accomplished when the broadhead engaging surfaces of the clamping fingers are essentially parallel to the broadhead engaging surface to provide the most clamping surface, adjustable setscrews 46a and 46b are mounted on the frame member 42 with their working ends adapted to engage against the wall 41c of the frame member 41, as shown particularly in FIG. 9. The setscrews 46a and 46b are threadedly received in tapped openings 47a and 47b formed in the wall 42c of the frame member 42, and to facilitate turning and adjusting of the setscrews, holes are provided in alignment therewith in the opposing wall 42d, such as shown by hole 48b to permit entry of a tool for engaging the head of the setscrews. The setscrews 46a and 46b are arranged to provide point contact with the frame member 41 at points spaced from the positions of the cap screws 43 and 43a to coat therewith in maintaining the clamping fingers of the frame members essentially parallel during the clamping operation.

The sharpening angles of the broadhead, generally designated by the numeral 49, having a sharpened edge 50 is preferably between 15° and 20° relative to the planar axis of the broadhead, and preferably about 15° whereby the angle between the opposed sharpened surfaces of an edge is about 30°. Changing the spacing relation between the edge 50 and the guide bars of the frame members will enable the changing of the sharpening angle. Once the broadhead is mounted on the guide and holder, it may be wiped or stroked across the sharpening surface 51 of the sharpening member 52 in the same manner already described in connection with sharpening a knife blade, and as seen in FIG. 9, the particular wall 41d or 42d of the frame members 41 and 42 will coat with the broadhead in engaging the sharpening surface to maintain a constant angle of sharpening relative to the sharpening surface during the sharpening function.

Referring now to the embodiment of FIGS. 10 to 13, a modification is illustrated which differs from the other embodiments primarily in that the elongated bar-shaped guide provided at the opposite sides of the holder is adjustably movable in order to change the sharpening angle without necessitating the unclamping and re-clamping, together with repositioning of the knife blade in the holder.

The usual steps taken in the sharpening of a knife blade include clamping the blade in the holder and grinding in an edge by working the blade against a coarse honing stone. After the edge has been ground in, inspection will show a burr left on the edge which then can be removed to provide a razor sharp edge by working the knife blade against a fine honing stone at an increased sharpening angle.

With respect to the embodiments of FIGS. 1 to 9, to obtain a given sharpening angle and then an increased sharpening angle, it is necessary to clamp the blade in the holder adjacent the free edges of the clamping members to provide one sharpening angle and thereafter to re-clamp the blade in the holder by moving the blade deeper into the holder or moving the holder closer to the cutting edge so that an increased sharpening angle is provided. With respect to some knives, it is also necessary to move the holder closer to the tip of the knife so that the guides are closer to the tip and thereby enable the proper sharpening of a curved tip.

While this can normally be done with adequate precision, there is always the possibility that the alignment of the blade with the holder after it has been re-clamped may be slightly different than the original alignment and which may have some detrimental effect on the final working of the blade at the increased sharpening angle.

It is not necessary to pursue a re-clamping procedure with the embodiment of FIGS. 10 to 13 to vary the sharpening angle as here such can be accomplished by merely readjusting the position of the bar-shaped guides on the holder relative to the spacing distance between the knife edge and the guides.

The holder here includes a pair of mirror image frame members 60 and 61 having mounted on the outer sides thereof a pair of mirror image bar-shaped guides 62 and 63.

Each frame member includes a pair of clamping fingers 64 and 65 having opposed clamping faces between which a knife blade is clamped, as illustrated by the knife blade 66 in FIG. 11. However, it should be appre-
associated that any number of clamping fingers may be provided on each frame member, whether it be one or a dozen. The clamping fingers 64 and 65 extend from a cross plate portion 67 and 68 which ties the fingers together and provides a surface against which the guide bars 62 and 63 engage. Cap screws 70 are provided to bring the frame members toward and away from each other in clamping and unclamping relationship and are freely received in bores 71 formed in the fingers 64 of frame member 60 and threaded receiving in tapped holes 72 formed in the clamping fingers 64 of the frame member 61. In order that the head end of the cap screws 70 be substantially flush with the outer surfaces of the clamping fingers 64, suitable counterbores are provided in the fingers to accept the heads. In order to assist in the spreading of the clamping fingers 64 and 65 when loosening the cap screws 70, one or more resilient washers 73 may be mounted on the cap screws and positioned between the clamping fingers as illustrated. These washers may be of natural or a synthetic rubber or of a suitable plastic.

As in the embodiments of FIGS. 4 to 9, setscrews 75 are threadedly received in the frame member 60 for engagement against the inner surface of the frame member 61. In order to coat with the cap screws 70 and adjust the planar clamping faces of the clamping fingers 64 and 65 to accommodate knife blades of various thicknesses and tapers wherein the planar faces of the clamping fingers can be set to parallel relationship with opposite sides of the knife blades, thereby effecting the best possible clamping engagement and eliminating any possible wobble between the holder and the blade during the working of the blade on a sharpening surface. However, in connection with this embodiment and the embodiment of FIGS. 7 to 9, as explained in relation to the embodiment of FIGS. 4 to 6, fixed pins could be used in place of the setscrews to regulate the angular relationship of the opposed faces when in clamping position with a blade. The bar-shaped guides 62 and 63 include mounting plate portions 80, 81 and guide bar portions 82, 83 which extend substantially perpendicular to the mounting plate portions. The mounting plate portions engage flat against the outer surfaces of the frame members and particularly against the cross plate portions 67 and 68 and are held in place by means of cap screws 85, 86, which are respectively in threaded engagement with tapped holes 87 and 88 formed in the frame members 60 and 61. Slots 90, 91 are formed in the mounting plate portions of the guide bars for coacting with the cap screws 85, 86 so that the guide bars may be adjustably mounted along the outer sides of the frame members by loosening and tightening of the cap screws. The slots 90, 91 are at an incline relative to the longitudinal axis of the guide bars, and upper and lower stops 93, 94, 95 and 96 are provided on the outer faces of the mounting plate portions 67 and 68 in order to assist in properly aligning the guide bar relative to the frame members so that they are parallel to the free ends of the clamping fingers when the guide bars are in either position on the frame members. The inclined slots cause the guide bars to be moved both toward the cutting edge and the tip end of the blade, this being necessary with blades having curved ends to provide the proper grinding action by the guide bars. In this respect the holder must be mounted on the knife blade so the inclination of the slot is such that the open end of the slot nearest the cutting edge is nearest the tip end of the blade.

As seen in FIGS. 12 and 13, when the guide bars 62 and 63 are in their upper positions where they engage against the stops 93, a given sharpening angle is established for the knife blade clamped by the holder relative to the sharpening surface 98 of the sharpening member 99 with the guide bar in engagement with the sharpening surface. The guide bars are shown in their other position in FIG. 13 where they engage against the stops 94 and 96 of the frame members, thereby bringing the guide bars closer to the blade edge and increasing the sharpening angle. Accordingly, it can be seen that the sharpening angle may be adjusted quickly and easily without the necessity of reclamping the knife blade in the holder by merely adjusting the positions of the guide bars. The sharpening angle in FIG. 12 is designated as 130° on the drawing, while the sharpening angle in FIG. 13 is 160°. However, it should be appreciated that these are illustrative of satisfactory sharpening angles and that other angles may be defined by varying the width of the guide bars. Where the holder would be used for the same style knife at all times and the depth of the blade clamped in the holder is desired to be the same at all times, a stop 100, FIG. 12, may be provided at the inner surface of the clamping fingers of one frame member, such as shown in connection with the frame member 60. It should also be appreciated that a stop could be provided on the frame member 61, but in all probability a stop on one of the frame members would be sufficient to gauge the depth of clamping of the knife blade.

The method of double-grinding or double-edging a knife blade according to the invention to provide a razor sharp edge can be carried out by using any of the disclosed holders. This method is simple and enables an unskilled person following simple directions to obtain a razor sharp edge on a knife blade.

The method may be carried out by use of the holders in FIGS. 1 to 9, as well as the holder in FIGS. 10 to 13. When performed with the holders of FIGS. 1 to 9, the holder is first clamped onto the back edge of the knife blade at the prescribed position relative to the cutting edge and the tip end of the blade. Next, the cutting edge is ground on one side by moving it in circular motions on a coarse honing stone or sharpening member until a burr is detected along the entire length of the cutting edge. The knife blade and holder are then flipped over to grind in the other edge in the same fashion until a burr is formed along the entire cutting edge. The holder is then reclamped onto the knife blade by moving it closer to the cutting edge and closer to the tip end of the blade. The movement toward the tip end of the blade will depend upon the contour of the cutting edge. For example, if the cutting edge is absolutely straight, the holder would not be moved at all toward the tip end, but if it is curved it will be moved to a certain degree in order to assure that the tip end of the blade may be provided with substantially the same sharpening angle as the other portion of the blade. Movement of the holder toward the cutting edge causes movement of the guide bars toward the cutting edge and ultimately increases the sharpening angle as the holder and knife blade are worked against a sharpening surface. This enables the second edge or grinding operation to be performed not on the entire ground surface.
generated by the first grinding operation but only on the very edge portion, as shown in FIG. 12, so that a razor sharp edge can be accomplished. Thereafter, the knife blade cutting edge is worked against a fine honing stone or sharpening member by alternately stroking opposite sides of the cutting edge by moving the blade toward the sharpening surface until the burr has been removed. Preferably, the cutting edge is moved at an angle of about 45° to the hone. The knife blade may then be removed from the holder as it is then ready for use.

When performing the method with the holder of FIGS. 10 to 13, the holder is first clamped onto the knife blade in a position relative the cutting edge and the tip end of the blade. The holder is aligned so that the inclination of the slot on the movable guide bars extends in the direction of the cutting edge and the tip end of the knife blade. The guide bars are positioned at their outermost extremities, thereby defining a sharpening angle when the holder and blade are positioned on a sharpening stone for effecting the first grinding operation on the coarse honing stone or sharpening surface. Then, like in the use of the holders, the holder and knife blade are moved in circular motions across the face of the sharpening member until a burr may be detected along the entire edge of the knife blade. The holder and knife blade are then flipped over and again moved in circular fashion across the coarse sharpening surface until a burr is felt along the entire cutting edge. Thereafter, the movable guide bars are loosened and readjusted to their innermost position wherein they are moved toward the cutting edge and toward the top edge of the knife blade. They are then tightened in place. The final honing step then takes place by working the blade and holder against a fine honing stone or sharpening member. Movement of the guide bars toward the cutting edge increases the sharpening angle so that the grinding action on the fine hone does not take place along the entire ground face effected by the grinding on the coarse honing stone but only on the very edge portion as seen in FIG. 12. The knife blade and holder are stroked against the honing stone where the hone moves toward the cutting edge alternately, first on one side for one stroke and then on the other side for the next stroke. Preferably, the stroking action is along a line 45° relative to the hone and the stroking action continues until the burr has been removed. At that point, it can be appreciated that the knife blade will have a razor sharp cutting edge.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention, but it is understood that this application is to be limited only by the scope of the appended claims.

The invention is hereby claimed as follows:

1. A blade sharpener adapted to be used for sharpening the cutting edge of a knife blade by working the edge faces against a flat surface of a sharpening member, said sharpener comprising, a pair of substantially identical frame members arranged together in mirror image relationship to clamp and guide a blade during sharpening of the cutting edge on a sharpening surface to obtain a given edge angle, each said frame member including a clamping face adapted to engage the side of a blade, the face of one frame member aligning with the face of the other frame member to define a set of clamping faces between which the blade is clamped, an elongated bar-shaped guide member projecting outwardly from the plane of the face such that a guide member is provided on both sides of the sharpener to define the sharpening angle of the cutting edge and dispose the plane of the blade in inclined relation to the sharpening member surface when the blade cutting edge and the guide member are in engagement with the sharpening member surface, said elongated bar-shaped guide members adapted to extend substantially parallel to and in spaced relation to the cutting edge of a blade clamped between said clamping faces and engage the sharpening member surface to guide generation of the edge angle in sharpening the cutting edge, and means mounted on said frame members in spaced relation to the clamping faces for permitting relative movement of said frame members toward and away from each other into blade clamping and unclamping positions, said means further permitting the adjusting of the distance between said faces to clamp blades of various thicknesses.

2. A blade sharpener as defined in claim 1, and means coating with said frame members to regulate the angular relationship of the opposed clamping faces when in clamping position with a blade.

3. A blade sharpener as defined in claim 2, wherein said coating means is adjustable.

4. A blade sharpener adapted to be used for sharpening the cutting edge of a knife blade by working the edge faces against a flat surface of a sharpening member, said sharpener comprising, a pair of substantially identical frame members arranged together in mirror image relationship to clamp and guide a blade during sharpening of the cutting edge on a sharpening surface to obtain a given edge angle, each said frame member including a clamping face adapted to engage the side of a blade, the face of one frame member aligning with the face of the other frame member to define a set of clamping faces between which the blade is clamped, an elongated bar-shaped guide member adjustable mounted on the outer side of each frame member and projecting outwardly from the plane of the face such that a guide member is provided on both sides of the sharpener to define the sharpening angle for the cutting edge and dispose the plane of the blade in inclined relation to the sharpening member surface when the blade cutting edge and the guide member are in engagement with the sharpening member surface, said elongated bar-shaped guide members adapted to extend substantially parallel to and in spaced relation to the cutting edge of a blade clamped between said clamping faces and engage the sharpening member surface to guide generation of the edge angle in sharpening the cutting edge, means mounting each guide member so that it is adjustably movable on the frame member whereby the sharpening angle for the cutting edge may be varied without unclamping the blade, and means mounted on said frame members in spaced relation to the clamping faces for permitting relative movement of said frame members toward and away from each other into blade clamping and unclamping positions said means further permitting the adjusting of the distance between said faces to clamp blades of various thicknesses.

5. A blade sharpener as defined in claim 4, wherein the mounting means for the guide members includes slots in the members and cap screws threadedly received in the respective frame members.
6. A blade sharpener as defined in claim 5, wherein the axis of the slots is inclined relative to the guide members.

7. A blade sharpener as defined in claim 6, wherein stop means are provided on the frame members to limit movement of the guide members and assist in aligning the guide members relative to the frame members.

8. A blade sharpener as defined in claim 4, wherein stop means is provided on the frame members to limit the depth of insertion of the knife blade in the holder.

9. A blade sharpener adapted to be used for sharpening the cutting edge of a knife blade by moving the edge faces against a surface of a sharpening member, said sharpening member comprising, a pair of substantially identical frame members arranged together in mirror image relationship to clamp and guide a blade during sharpening of the cutting edge on a sharpening surface to obtain a given edge angle, each said frame member including a plurality of clamping fingers having clamping faces adapted to engage the side of a blade, the fingers of one frame member aligning with the fingers of the other frame member to define a plurality of sets of clamping fingers between which the blade is clamped, an elongated bar-shaped guide member adjustably mounted on the outer side of each frame member and projecting outwardly from the plane of the fingers such that a guide member is provided on both sides of the sharpener, said elongated bar-shaped guide members adapted to extend substantially parallel to the cutting edge of a blade clamped between said clamping faces and engage the sharpening member surface to guide generation of the edge angle in sharpening the cutting edge, means mounting said guide members so that they are adjustably movable on the frame members whereby the sharpening angle for the cutting edge may be varied without unclamping the blade, first means at each set of clamping fingers for bringing said frame members toward each other into blade clamping position and for adjusting said fingers to clamp blades of various thicknesses, and second means coacting with each said first means to adjust the relative planar relation of the clamping faces of each set of clamping fingers into essentially parallel relation with respect to the sides of the blade clamped thereby.

10. A blade sharpener as defined in claim 9, wherein said first means includes cap screws having heads engaging one of the frame members and shanks threadedly received by the other of the frame members.

11. A blade sharpener as defined in claim 9, wherein said second means includes setscrews threadedly received in one of the frame members and bearing against the other of the frame members.

12. A blade sharpener as defined in claim 10, wherein said second means includes setscrews threadedly received in one of the frame members and bearing against the other of the frame members.