

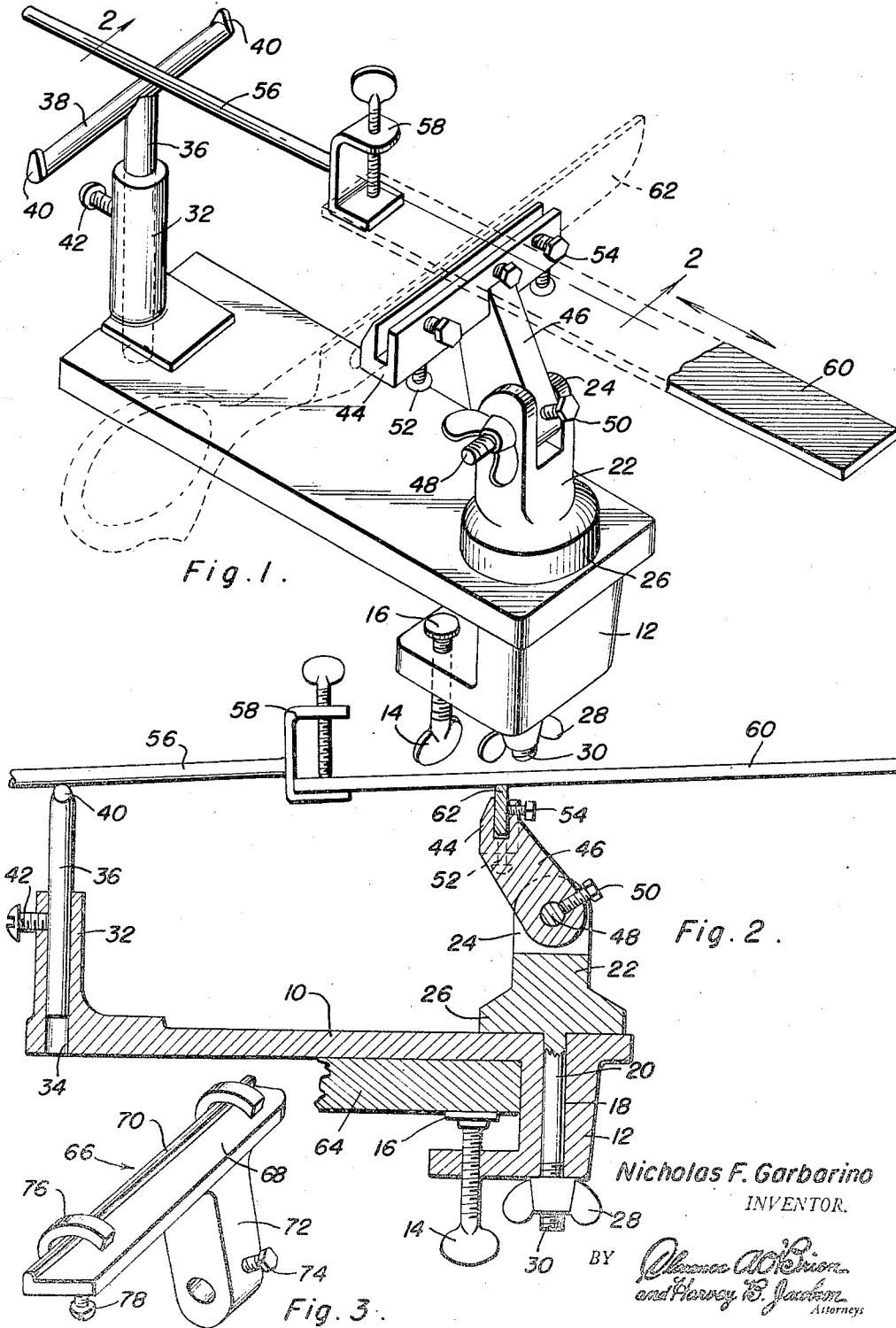
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BLADE SHARPENER

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BLADE SHARPENER

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This invention relates to new and useful improvements in work holders and the primary object of the present invention is to provide a device for holding blades so that the same may be quickly and readily sharpened in a convenient manner.

Another important object of the present invention is to provide a blade sharpener including an adjustable blade receiving member and a novel and improved guide that slidably engages a file holder for selectively sharpening the cutting edge of a blade at a desired angle.

A further object of the present invention is to provide a blade sharpener for shears, knife blades, cutters or the like that is quickly and readily applied to or removed from a supporting structure and all parts of which are adjustable and removable to accommodate blades of various sizes or for the convenient inspection, replacement or repair thereof.

A still further aim of the present invention is to provide a blade sharpener that is small and compact in structure, strong and reliable in use, simple and practical in construction, neat and attractive in appearance, relatively inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the present blade sharpener and showing in dotted lines a shear applied thereto, and with parts of the sharpening file broken away;

Figure 2 is a longitudinal vertical sectional view taken substantially on the plane of section line 2-2 of Figure 1, and showing the shear blade in cross section; and,

Figure 3 is a perspective view of the blade tilt head that is used in conjunction with the present invention for sharpening flat blades.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents a substantially rectangular base member or anchor plate that is integrally formed, at one end, with a depending substantially L-shaped body or hook 12 that adjustably supports a clamping screw 14 preferably having a pressure foot 16.

The body 12 and plate 10 are provided with an opening 18 that receives a bolt 20 which projects downwardly from a rotatably adjustable support 22 having a bifurcated upper portion 24. This support 22 includes a bearing face 26 that engages the upper face of the plate 10. A wing nut 28 receivably engages the externally threaded lower end 30 of the bolt 20 that pro-

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jects outwardly from the body 12 and bears against the body 12 to retain the support 22 in a selected rotated position.

Rigidly attached to or forming an integral part of the plate 10, is an upstanding tubular guide supporting post 32 having an axial bore that communicates with an opening 34 provided in said plate 10 adjacent one end thereof.

Slidably mounted in the post 32 and the opening 34, is a cylindrical rod or guide 36 one terminal of which is rigidly secured to a cross bar or bearing element 38 having stop 40 at each end thereof. The guide 36 is adjustable in the post 32 by a set screw 42 carried by said post.

The numeral 44 represents a substantially channel shaped blade receiving member that is integrally formed with an outwardly inclined attaching ear 46 that pivotally engages a bolt and wing nut 48 carried by the bifurcated portion 24 of the support 22. A set screw 50 adjustably carried by the ear 46 engages the bolt 48 for retaining the member 44 in selected pivoted positions.

Adjustably carried by the web portion of the member 44, is a plurality of longitudinally spaced blade leveling screws 52 that engage the lower edge of a blade to position the same relative to the member 44.

One leg portion of the channeled member 44 adjustably supports a further plurality of longitudinally spaced screws 54 that are employed for retaining a blade removably fixed in said channeled member 44.

Fixed at one end of a handle or lever 56, is a clamp 58 that engages one end of a suitable file or abrasive surfaced member 60.

In practical use of the present invention for sharpening shear blades or the like 62, the said blade is positioned in the channeled member 44 as before described by the adjustment of screws 52 and 54. The turret or support 22 is swivelled or rotated to a desired position and clamped tight to the base by turning nut 28.

Body or base 10 is fixed to a supporting surface such as a table 64 by the body 12 and clamping screw 14.

The lever 56 bears upon the cross bar 38 and the file 60 lies upon the cutting edge of the blade 62.

The lever 56 is then actuated back and forth on the cross bar 38 to effect a sharpening of the blade 62 in a convenient and even manner.

Reference is now directed to Figure 3, wherein there is disclosed a tilt head 66 that is employed in conjunction with the present invention when knife blades or flat blades are to be sharpened.

The head 66 includes an elongated substantially rectangular plate 68 that is provided with a raised rib or bearing flange 70 at one edge that engages one edge of the knife blade.

Integrally formed with and projecting out-

wardly from the plate 68, is an integral ear 72 that adjustably supports a set screw 74.

Substantially U-shaped resilient clips 76 are removably secured to the plate 68 by fasteners 78 and one end of these clips yieldingly bear upon the knife blade to hold the same positioned on the plate 68.

When the head 66 is employed, the member 44 and ear 46 are removed from the support 22 so that the ear 72 of the head 66 will pivotally engage the bolt 48 with the set screw 74 also engaging the bolt 48 to retain the head 66 in selected pivoted positions.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Obviously, many suitable types of clamps or vises may be employed for supporting the article to be worked, such as a support carried by member 22 having a fixed clamping jaw and a movable clamping jaw, such jaws being adjustably connected for holding articles of various sizes.

Having described the invention, what is claimed as new is:

1. A blade sharpener comprising a base, an L-shaped body integrally formed with said base for engaging a supporting structure, a clamping screw adjustably carried by said body, a guide support rising from said base, a guide adjustably mounted in said guide support, means slidably carried by the guide for supporting a file, a rotatable support removably and adjustably secured to said body, a blade receiving member pivotally and adjustably carried by said rotatable support, and means carried by said member for retaining a blade relative thereto.

2. A blade sharpener comprising a base, an L-shaped body integrally formed with said base for engaging a supporting structure, a clamping screw adjustably carried by said body, a guide support rising from said base, a guide adjustably mounted in said guide support, means slidably carried by the guide for supporting a file, a rotatable support removably and adjustably secured to said body and said base, said rotatable support including a bifurcated upper portion, a blade receiving member, an attaching ear projecting laterally from said member and engaging the bifurcated portion of said rotatable support, means pivotally and adjustably securing said ear to the bifurcated portion of said rotatable support, and means for retaining a blade relative thereto.

3. In a blade sharpener including a base member having an attaching channel at one end and a guide; a blade holder comprising a support, a bolt fixed to said support, said attaching channel having an opening therein receiving said bolt, said bolt having a threaded free end portion projecting from said attaching channel, a holding nut receivably engaging the free end portion of said bolt and bearing against said attaching channel to retain the support in a selected rotated position relative to said base member, said support having a bifurcated upper portion, an elongated horizontally disposed blade

receiving and holding member having a depending ear received between the furcations of said bifurcated portion, a pivot carried by said bifurcated portion and received by said ear, a set screw carried by said ear bearing against said pivot to retain the receiving and holding member in a selected pivoted position relative to said support, and a leveling member carried by said receiving and holding member.

4. A blade sharpener comprising a base member having an attaching channel at one end, a tubular post rising from the remaining end of said base member, a guide slidably and rotatably positioned in said tubular post, a set screw carried by said post and bearing against the said guide for retaining the guide in a selected longitudinally and rotatably adjusted position relative to said post, a means slidable on the guide for supporting a file, a support, a bolt fixed to said support, said attaching channel having an opening therein receiving said bolt, said bolt having a threaded free end portion projecting from said attaching channel, a holding nut receivably engaging the free end portion of said bolt and bearing against said attaching channel to retain the support in a selected rotated position relative to said base member, said support having a bifurcated upper portion, a blade receiving and holding member having a laterally projecting ear received between the furcations of said bifurcated portion, a pivot carried by said bifurcated portion and received by said ear, a set screw carried by said ear bearing against said pivot to retain the receiving and holding member in a selected pivoted position relative to said support, and a leveling member carried by said receiving and holding member.

5. A vise comprising a base, an L-shaped member integrally formed with said base, a support journaled for rotation on the base, a bolt depending from the support and extending through the base and the L-shaped member, a nut threaded on the bolt and adjustable against the member to retain the support in a selected rotated position, said support having an upper bifurcated end, an elongated channel member including means for holding work therein, and means for leveling work therein, an ear depending from the channel member received by said bifurcated end, a pivot extending through said ear and said bifurcated end and disposed perpendicular to said bolt, and a set screw carried by said ear and engaging said pivot to retain the channel member in a selected pivoted position about the pivot.

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