

April 17, 1934.

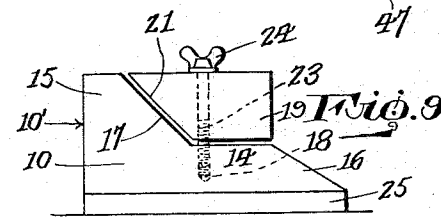
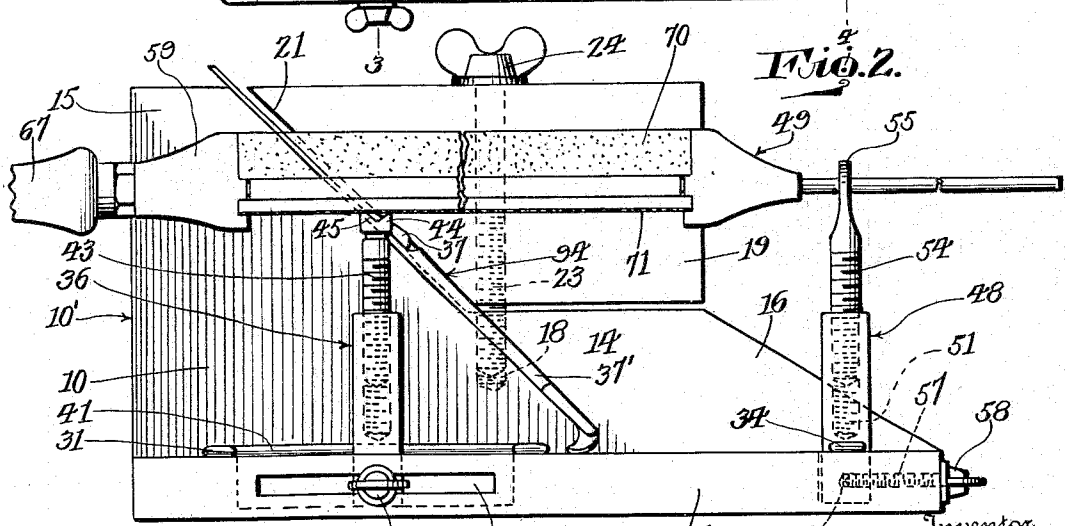
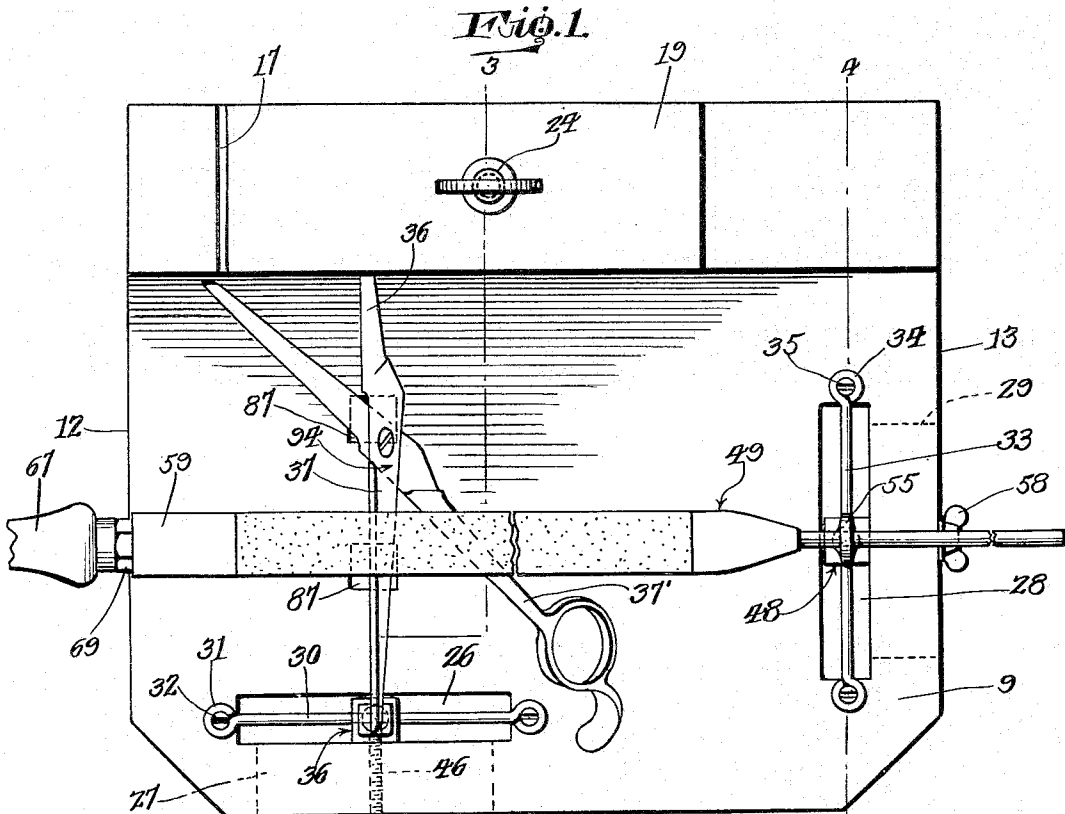
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1,955,366

SHARPENING DEVICE

Filed Dec. 2, 1932

2 Sheets-Sheet 1



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Fig. 3.

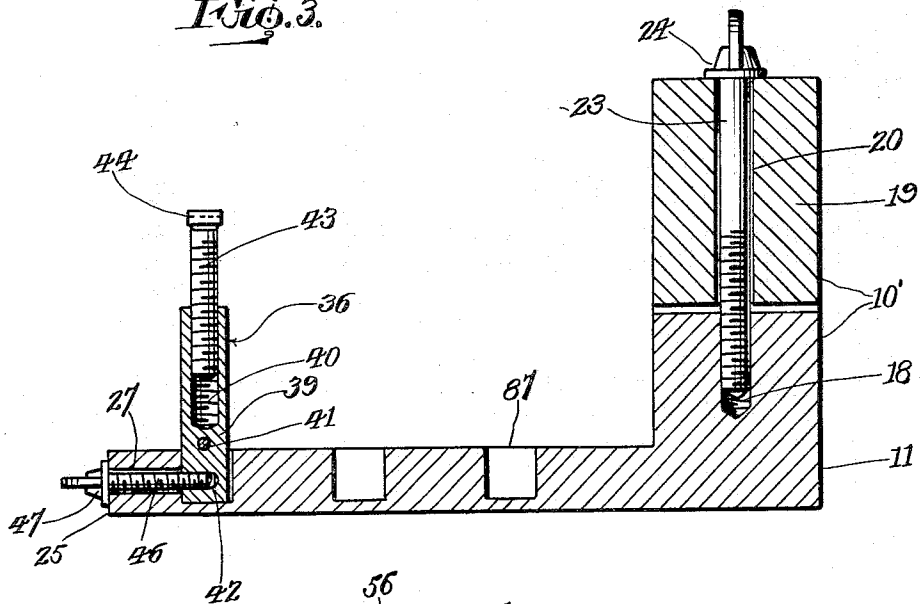


Fig. 4.

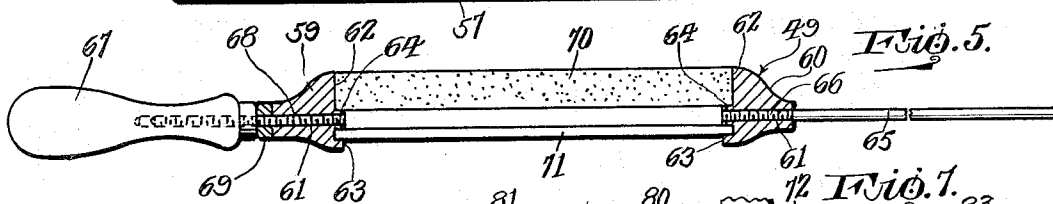
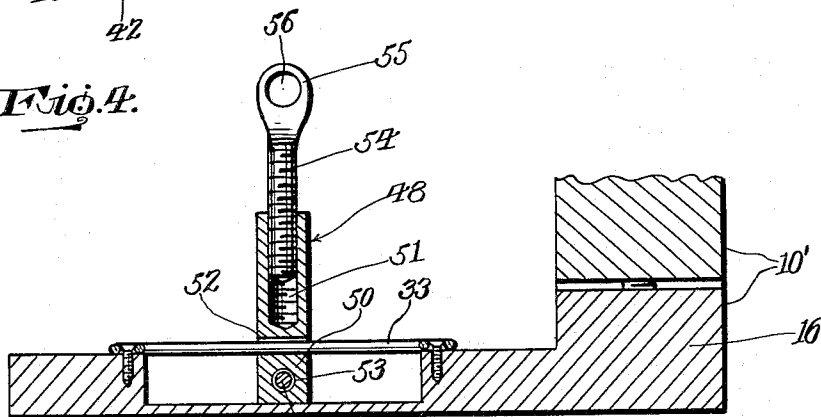


Fig. 5.

Fig. 6.

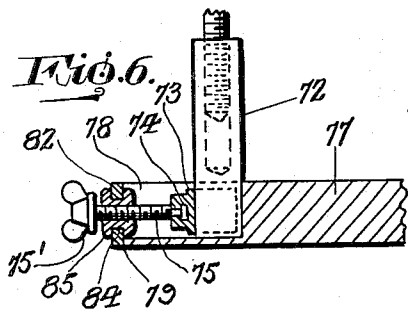
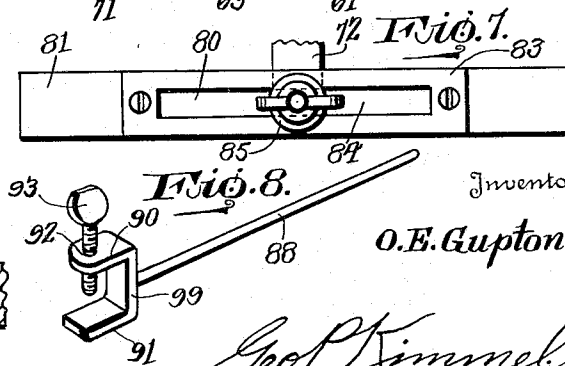


Fig. 8.



UNITED STATES PATENT OFFICE

1,955,366

SHARPENING DEVICE

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Application December 2, 1932, Serial No. 645,466

8 Claims. (Cl. 51—69)

This invention relates to a sharpening device designed primarily for the sharpening of shears, but it is to be understood that a device, in accordance with this invention may be employed for sharpening purposes in any connection for which it is found applicable.

In the usual sharpening devices for shears, the shear blade is clamped in such a manner, that it is necessary after beveling and sharpening the shears to employ a hammer to place them in proper bevel and curvature as they are oftentimes sprung in the sharpening by the old clamp methods, and to overcome the foregoing objection is one of the aims of a shear sharpening device in accordance with this invention.

Further objects of this invention are to provide a sharpening device including a vertically adjustable shear blade supporting element having an angularly adjustable seat for the point of the shear blade, and a vertically adjustable sharpener support having an angularly adjustable guide for the sharpener.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a shear sharpening device constituting a permanent and substantial means for sharpening shears; for positioning the shear blade for any desired bevel, and for clamping and holding the shear blade acted upon to prevent it being altered during the sharpening or finishing operations and thus avoid the chances of springing the points of the shear blades.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a shear sharpening device which is comparatively simple in its construction and arrangement, strong, durable, compact, thoroughly efficient in its use, conveniently adjustable, readily assembled and comparatively inexpensive to manufacture.

To the above ends essentially and to others which may hereinafter appear, the invention consists of such parts and such combination of parts which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a top plan view of the sharpening device.

Figure 2 is a front elevation thereof.

Figure 3 is a section on line 3—3 Figure 1 with the shears and sharpener omitted.

Figure 4 is a section on line 4—4 Figure 1 with the sharpener and shears omitted.

Figure 5 is a longitudinal section broken away of the sharpener.

Figure 6 is a sectional detail, broken away, illustrating a modified form of shear or sharpener supporting element.

Figure 7 is a fragmentary view in front elevation of the modified form of shear or sharpener supporting element positioned in the base of the device.

Figure 8 is a fragmentary view of a holder for a sharpener member or file.

Figure 9 is a view, upon a reduced scale, looking toward the inner face of the shear blade clamp.

With reference to Figures 1 to 5 and 9, the device includes a base plate 9 having arranged on the back portion thereof the upstanding stationary section 10 of a shear blade clamp 10'. The section 10 may be connected to the plate 9 in any suitable manner, and is shown by way of example, as integral with the latter. The section 10 is flush with the rear edge 11 of plate 9 and extends from the side edge 12 to the side edge 13 of plate 9. The section 10 includes an intermediate part 14 and a pair of end parts 15, 16. The end part 15 is of greater height than the parts 14, 16. The upper face of part 14 is flat and is disposed in a plane parallel to the plane of the upper face of plate 9. The top of part 16 inclines upwardly from edge 13 and merges into one end of the upper face of part 14. The other end of the upper face of part 14 merges into the inner or working face 17 of section 10. The face 17 is disposed at an acute angle with respect to the part 14 and is of a length to extend from its point of mergence with the upper face of part 14 to the upper end of part 15. The part 14 intermediate its ends is formed with a vertical socket 18 having a threaded wall and opening at the top thereof. The clamp 10' also includes a shiftable section 19 formed with a lower flat face which opposes the upper flat face of part 14 of the stationary section 10, and is formed with a vertical opening 20 aligning with the socket 18. The opening 20 extends from the lower to the upper face of section 19. The latter is of a length greater than that of part 14 and of a width corresponding to that of parts 14, 15 and 16. The section 19 has one end squared and its other end inclined upwardly and outwardly from the lower face of section 19 to provide the latter with a working face 21 to oppose the working face 17 of section 10. The working face 21 is disposed at an acute angle with respect to the lower face of section 19, and is adjustable relative to the working face 17. The faces 17 and 21 coact to clamp the handle of a shear blade 37 to hold the latter at an inclination

to obtain the desired bevel. The sections 10 and 19 are adjustably connected together by a bolt 23 passing through opening 20 and threadedly engaging with the wall of socket 18. The bolt 23 at its upper end has a winged head 24 for seating upon the top of section 19.

The base plate 9 in proximity to its front edge 25 and to one side of its transverse median is formed with a lengthwise extending rectangular pocket 26, which opens at its front side into a slot 27 formed lengthwise of plate 9 and opening at the edge 25 of the latter. The base plate 9 in proximity to its edge 13 and intersecting its longitudinal median is provided with a transversely extending rectangular pocket 28, which opens into its outer side into a slot 29, formed transversely of plate 9 and opening at the edge 13 of the latter.

Extending lengthwise of plate 9 across the mouth of pocket 26 and aligning with the longitudinal median of the latter is a combined track and holding member 30, formed at each end with an eye 31, for the passage of holdfast means 32 for anchoring member 30 to plate 9. Extending transversely of plate 9, across the mouth of pocket 28 and aligning with the longitudinal median of the latter is a combined track and holding member 33, formed at each end with an eye 34 for the passage of holdfast means 35 for anchoring member 33 to plate 9.

The device includes a supporting element 36 for the outer end of a shear blade 37 and which consists of a standard 39 formed with a socket 40 opening at the upper end thereof. The wall of the socket 40 is threaded and below the latter the standard 39 is provided with a transverse opening 41 and a socket 42 having a threaded wall. The socket 42 is disposed at right angles to opening 41 and has its mouth at the front side of the standard. The latter is arranged in and seats upon the bottom of pocket 26. The mouth of socket 42 permanently aligns with the inner end of slot 26. Threadedly engaging with the wall of socket 40 is a vertically adjustable peripherally threaded post 43 having a head 44 provided with a V-shaped seat 45 for the outer end of blade 37. The seat 45 is capable of being positioned at an angle with respect to the upper end of the standard 39, the latter being slidably mounted on member 30 which extends through opening 41. The element 36 may be adjusted lengthwise of pocket 26, and is maintained in set position by a binding bolt 46 which extends through slot 27 and threadedly engages with the wall of socket 42. The bolt 46 has a winged head 47 to abut the edge 25 of plate 9.

The device further includes a combined guiding and supporting element 48 for one end of a sharpener, the latter being generally referred to at 49. The element 48 consists of a standard 50 formed with a socket 51 opening at the upper end thereof. The wall of the socket 51 is threaded and below the latter, the standard 50 is provided with a transverse opening 52 and a socket 53 having a threaded wall. The socket 53 is disposed at right angles to opening 52 and has its mouth at the outer side of standard 50. The latter is arranged in and seats on the bottom of pocket 28. Threadedly engaging with the wall of socket 51 is a vertically adjustable peripherally threaded post 54 formed with an enlarged head 55 provided with an eye 56 constituting a guide for the sharpener 49. The eye 56 is capable of being positioned at an angle with respect to the upper end of standard 50, the latter being slidably mounted on mem-

ber 33 which extends through opening 52. The element 48 may be adjusted lengthwise of pocket 28, and is maintained in set position by a binding bolt 57 which extends through slot 29 and threadedly engages with the wall of socket 53. The bolt 57 has a winged head 58 to abut the edge 13 of plate 9.

The sharpener 49 includes a pair of opposed, spaced, oppositely disposed tapered holders 59, 60 of like form and each has a lengthwise extending opening 61 with its wall threaded, a stepped inner face 62 formed with a transverse groove 63 and with said face providing a transverse shoulder 64 spaced from groove 63.

The sharpener 49 includes a combined guide and supporting rod 65 extended from holder 60 and formed with an inner peripherally threaded portion 66 to engage the wall of the opening 61 in holder 60. A handle 67 engages a peripherally threaded shank 68 formed on the bar 65 for engagement with the wall of opening 61 in holder 59, and interposed between the rear end of the latter and forward end of handle 67, as well as threadedly engaging with shank 68 is a lock nut 69. Seated upon the shoulders 64 and abutting the inner faces of the holders is a sharpening member 70, which is illustrated by way of example as consisting of a bar of carborundum. It is to be understood that the member 70 may be of any suitable material for sharpening the shear blade. Seated at its ends in the grooves 63 is a file 71. The member 70 and file 71 are clamped to the holders 59, 60 and arranged in parallel spaced relation. The rod 65 is extended through eye 56 when the sharpener 49 is used.

With reference to Figures 6 and 7 modified forms of blade and sharpener supporting elements respectively are shown, as well as a modified form of base plate. The change in the construction of these elements with respect to elements 36 and 48 reside in the standards and the means for anchoring the standards. The standards 72 of the supporting elements shown in Figures 6 and 7 function for the same purpose as the standard 39 or 50, but are not formed in their lower portions with openings and sockets, otherwise they are of the same construction as the standards shown in Figures 3, 4. With one of the standards 72 is to be associated a post 43 and with the other a post 54. A yoke shaped base member 73 is positioned about the lower end of each standard 72 and which has swivelly connected thereto, as at 74, the inner end of a binding bolt 75 formed with a winged shaped head 75'. The bolts 75 are disposed at right angles to the standards 72.

The modified form of base plate is indicated at 77 and is formed intermediate its ends on its upper face with a rectangular mortise 78 opening at the front edge 79 of the plate. The latter between its front and rear edges is formed with a rectangular mortise 80 which opens at the end edge 81 of plate 77. The mortises are disposed at right angles to each other. Secured against the edges 79, 81 of plate 77 are flat strips 82, 83 for closing the outer sides of the mortises 78, 80 respectively. Each strip is formed with an elongated rectangular slot 84 extending lengthwise thereof. Slidably mounted in each slot 84 is an interiorly threaded grommet 85, flanged as at 86 for coupling it to the slotted strip.

One of the standards 72 is removably mounted in mortise 78 and the other in mortise 80. The standards may be adjusted lengthwise of the mortises and they seat upon the bottoms of the latter.

The binding bolts 75 extend through and have threaded engagement with the grommets 85. The bolts are capable of being shifted lengthwise of slots 84 and when shifted not only carry the base members 73, but also the standards 72 and grommets 85. The bolts are employed for binding the base members to the standards 72 and the latter to the inner walls of the mortises.

The base plate 9, as well as the plate 77 is formed with spaced parallel sockets opening at its upper face to removably and selectively receive a blade supporting element of the form shown in Figure 6. The sockets referred to are shown with respect to plate 9 and indicated at 87.

Figure 8 illustrates a modified form of holder for a sharpener member or file, and it comprises a rod 88 terminating at one end in a plate 89 having extending therefrom and at right angles thereto a pair of spaced parallel flanges 90, 91, the former provided with an opening 92 formed with a threaded wall. Engaging with the wall of opening 92 is a thumb screw 93 for clamping one end of the sharpener or file between the flanges.

The clamp 10' is adjustable and its purpose is to clamp or bind the shear blade 37 to be sharpened, as indicated by the pair of scissors 94 shown in Figures 1 and 2 as being clamped and adjusted in position. The purpose of element 48 is to guide and support the rod 65 of sharpener 49. The post 54 of element 48 is adjustable to any desired height in connection with different sizes of shears or scissors that may be desired to be sharpened. The purpose of element 36 is to support the outer end of blade 37 and the post of such element is adjustable to any desired height for the same function as that referred to with respect to post 54. The seat at the top of post 54 holds the point of the shear blade to be acted upon. The combination of clamp 10' and element 36 in connection with the handle of shear blade 37' resting on the base plate holds the blade 37 in a rigid position to be beveled, sharpened or finished in the desired manner when the sharpener 49 is used in connection with element 48.

By placing the sharpener 49 across the blade 37 and with the rod 65 extended through eye 56 in post 54, the latter can be adjusted to the position whereby any desired bevel can be created on the blade 37. After adjustment of post 54 the member 70 is employed for sharpening blade 37. After the blade has been sharpened the file 71 may be used for giving corrugated finish on the shears.

The supporting element for the sharpener is adjustable in either direction on account of the variances in distance due to the sharpening of small or large shears and to permit as near as possible a centering of the sharpener across the blade of the shears. It will be observed that a smaller shear would require the supporting element for the shear blade to be positioned closer to the clamp 10' on account of the shortness of the shear blade and likewise necessitates the adjusting of the supporting element which supports and guides the rod 65 of the sharpener. As the form of blade supporting element shown in Figure 6 includes a standard which is removable, the standard with its associated parts can be removed from the mortise and positioned in a selectable socket 87 whereby the blade support would be arranged nearer clamp 10' than as shown in Figures 1, 2 and 6.

What I claim is:

1. In a shear sharpening device, an adjustable shear blade clamp, a vertically and horizontally

adjustable shear blade supporting element including an angularly adjustable seat for the point of the blade and opposing in spaced relation said clamp, and a vertically and horizontally adjustable sharpener supporting element spaced from said other element and clamp and including an angularly adjustable guide for said sharpener.

2. In a shear sharpening device, an adjustable shear blade clamp, a vertically and horizontally adjustable shear blade supporting element including an angularly adjustable seat for the point of the blade and opposing in spaced relation said clamp, a vertically and horizontally adjustable sharpener supporting element spaced from said other element and clamp and including an angularly adjustable guide for said sharpener, and means contacting with said elements for maintaining them in set position.

3. In a shear sharpening device, a base plate, an adjustable shear blade clamp connected thereto, a vertically adjustable supporting element for the shear blade opposing in spaced relation said clamp and seated in and bodily shiftable lengthwise of said plate, a vertically adjustable combined guide and supporting element for a sharpener spaced from said clamp and shear blade supporting element and seated in and bodily shiftable transversely of said plate, and means for detachably maintaining said elements in their shifted positions lengthwise and transversely of the plate.

4. In a shear sharpening device, a base plate, an adjustable shear blade clamp connected thereto, a vertically adjustable supporting element for the shear blade opposing in spaced relation said clamp and seated in and bodily shiftable lengthwise of said plate, a vertically adjustable combined guide and supporting element for a sharpener spaced from said clamp and shear blade supporting element and seated in and bodily shiftable transversely of said plate, means for detachably maintaining said elements in their shifted positions lengthwise and transversely of the plate, said shear blade supporting element including an angularly adjustable seat for the point of the shear blade, and said combined guide and supporting element for the sharpener including an angularly adjustable eye for the passage of one end of the sharpener.

5. In a shear sharpening machine, a base plate, an upstanding adjustable clamp connected to said plate for clamping the handle end of a shear blade, a standard mounted in the plate and capable of being bodily shifted lengthwise with respect to the latter and opposing and spaced from the clamp, a standard mounted in the plate and capable of being bodily shifted transversely with respect to the latter and spaced from the said other standard and clamp, vertically adjustable posts mounted in and extending upwardly from said standards, one of said posts including a seat for receiving the pointed end of the shear blade, the other of said posts provided with an eye for the passage of one end of a sharpener and providing a guide for the latter, and means for fixedly maintaining said standards in set position.

6. In a shear sharpening device, a base plate having a shear blade clamp at one side thereof, said plate having its upper face formed with a cutout to receive a combined guide and supporting element for a sharpener, and said plate having its upper face formed transversely thereof with a series of spaced aligning cutouts for se-

lectively receiving a shear blade support to oppose in spaced relation said clamp.

7. In a shear sharpening device, a base plate, an adjustable shear blade clamp connected thereto, a vertically adjustable supporting element for the shear blade opposing in spaced relation said clamp and seated in and bodily shiftable lengthwise of said plate, a vertically adjustable combined guide and supporting element for a sharpener spaced from said clamp and shear blade supporting element and seated in and bodily shifted transversely of said plate, and spaced means operating through a pair of edges for the plate for detachably maintaining said elements in their shifted positions lengthwise and transversely of the plate, the said edges disposed at right angles to each other.

8. In a shear sharpening device, a base plate, an adjustable clamp for the handle of a shear blade, said clamp being connected upon and extending upwardly from the plate, a vertically adjustable supporting element for the point of the shear blade, opposing said clamp and mounted in and capable of being bodily shifted with respect to the plate, a vertically adjustable combined guide and supporting element for a sharpener spaced from said other element and said clamp and mounted in and bodily shiftable with respect to the plate in a direction at right angles to the direction of shift of the said other element, and means for detachably maintaining said elements in their shifted positions.

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