

July 7, 1953

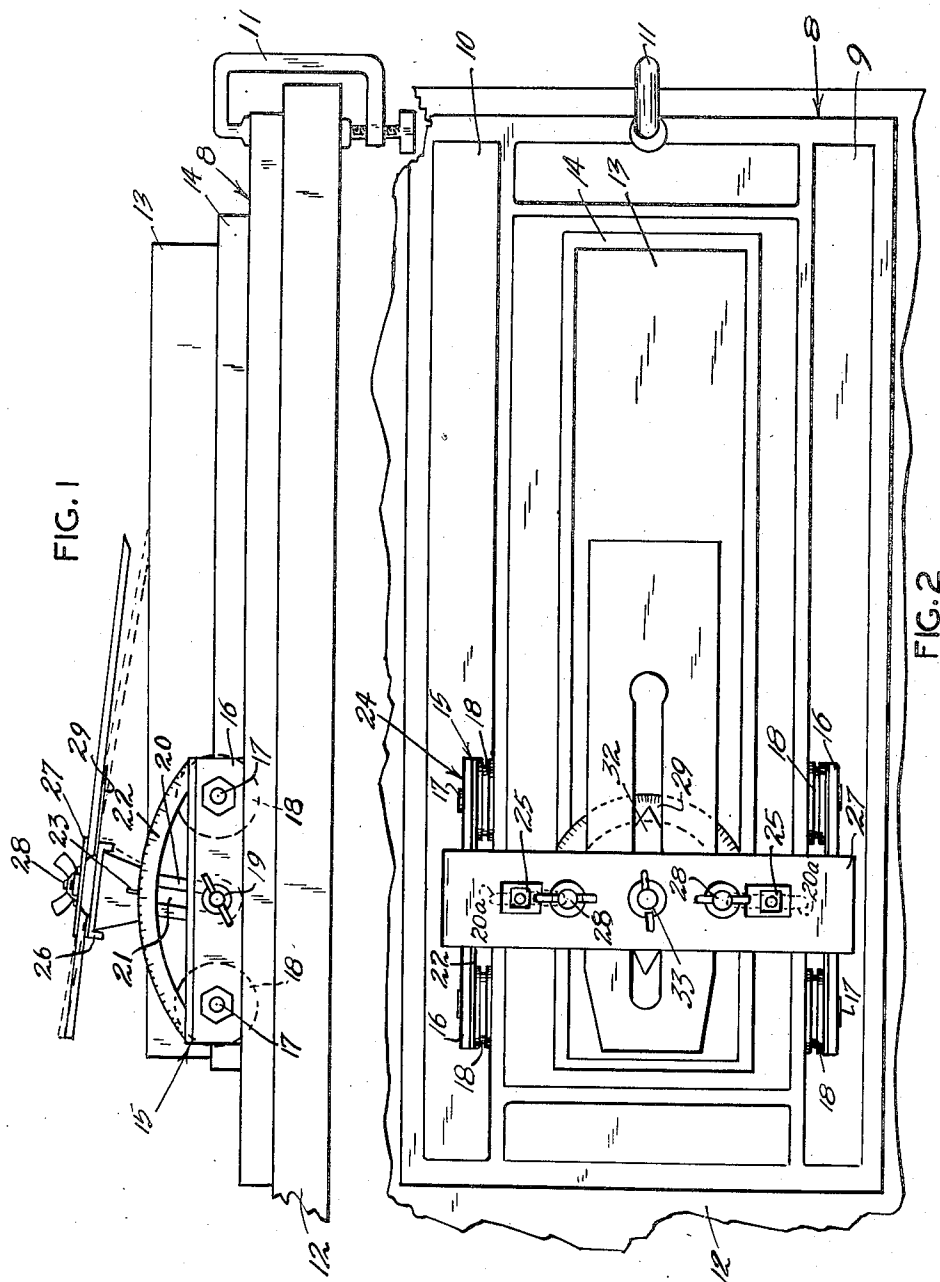
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2,644,279

MOUNTING APPARATUS FOR SHARPENING TOOLS, BLADES, AND THE LIKE

Filed Aug. 24, 1950

2 Sheets-Sheet 1



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FIG. 3

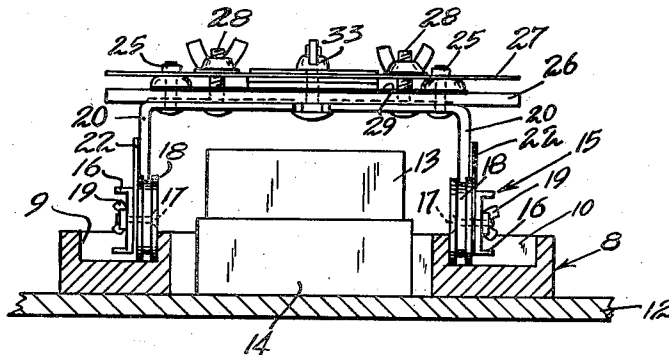


FIG. 4

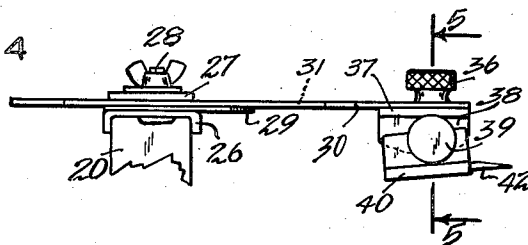
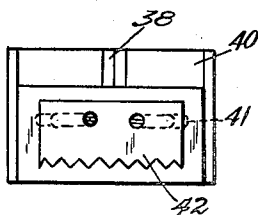


FIG. 6

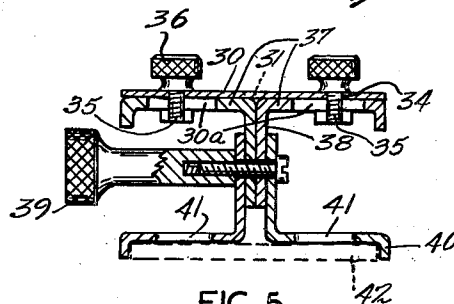


FIG. 5

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2,644,279

MOUNTING APPARATUS FOR SHARPENING
TOOLS, BLADES, AND THE LIKE

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Application August 24, 1950, Serial No. 181,168

4 Claims. (Cl. 51-157)

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This invention relates to sharpening devices for tools, blades and the like. More specifically it relates to sharpening devices wherein precision type of sharpening is made possible.

It is the general object of my invention to provide a novel and improved sharpening device for tools, blades and the like, said device being of cheap and simple construction and capable of easy operation.

A more specific object is to provide an improved sharpening device through the use of which each of a plurality of tools, blades or the like may be repeatedly sharpened at the same angle each time even though each of said tools, blades or the like have sharpened edges of different angularity.

A further object is to provide an improved sharpening device capable of ready adjustment to permit sharpening of a given tool, blade or the like at a predetermined angle.

These and other objects and advantages of my invention will more fully appear from the following description made in connection with the accompanying drawings, wherein like reference characters refer to the same or similar parts throughout the several views, and in which:

Fig. 1 is a side elevational view of one embodiment of my invention secured for operation.

Fig. 2 is a top plan view of the same.

Fig. 3 is a front elevational view partly in section of the device with the tool which is to be sharpened positioned in a substantially horizontal position;

Fig. 4 is a fragmentary side elevation view of the device, showing the clamping means used when sharpening hair clipper blades;

Fig. 5 is a vertical sectional view taken along lines 5-5 of Fig. 4;

Fig. 6 is a bottom elevational view of the clamping means for hair clipper blades with a blade in proper position.

One embodiment of my invention includes, as shown in Figs. 1-6, a generally rectangularly shaped frame 8 which has a pair of spaced parallel tracks 9 and 10. This frame 8 is adapted to be secured by a clamp 11 to a table or similar structure indicated as 12. Fitted between the tracks 9 and 10 is an abrasive 13 which in turn is mounted within a box or holder 14 to hold the abrasive 13 immovable relative to the frame 8.

Mounted on the frame 8 within the tracks 9 and 10 for reciprocating movement relative to the abrasive 13 is a carriage indicated generally as 15. This carriage 15 includes an outwardly facing channel strap 16 which has secured to its

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opposite ends by pivot bolts 17 a pair of spaced rollers 18. Secured to the medial section of the channel strap 16 by a wing bolt 19 is a metal strap 20 which is bent into a right angle so as to provide a vertical portion adapted by a longitudinal slot 21 to be secured to the channel strap 16. The other leg of the strap 20 extends inwardly and horizontally and is also provided with a longitudinal slot 20a shown in broken lines in Fig. 2. The rollers 18 are carried by one of the tracks 9 and 10. Also secured to the channel strap 16 by the pivot bolts 17 is a protractor 22 or similar angle measuring device which extends upwardly above the channel strap 16. This protractor 22 cooperates with a very narrow slot 23 in the strap 20 to indicate the angle at which the normally horizontal portion of the strap 20 is positioned with respect to a horizontal line.

The remaining track carries a structure exactly the same as that described in the preceding paragraph. For the sake of brevity this other structure will be indicated as 24.

Mounted above the two inwardly extending horizontal legs of the right angled strap 20 and its counterpart of structure 24 by means of a pair of bolts 25 which extend through the slots 20a of these legs is an inverted channel strap 26. This channel strap 26 provides the frame-work for securing the two side portions of the carriage 15 to each other. Secured above this channel strap 26 is a plate 27 which has apertures provided therein to accommodate the bolts 25 as best shown in Fig. 2. Extending upwardly through the slots in the horizontal legs of the strap 20 and its counterpart and through the inverted channel strap 26 and through the plate 27 is a pair of spaced wing bolts 28 which serve to cause the plate 27 to be rigidly secured to the channel strap 26. Mounted on the wing bolts 28 between the channel strap 26 and the plate 27 and extending forwardly relative thereto is a protractor or similar angle indicating member 29. Also carried between the channel strap 26 and the plate 27 and above the angle indicator member 29 is a mounting arm 30. As shown this mounting arm 30 has a longitudinally extending slot 31 formed therein to accommodate a pointer element 32 which also has a longitudinally extending slot therein to accommodate a wing bolt 33. This wing bolt 33 extends downwardly through the plate 27, the pointer elements 32 and the channel strap 26 and is adapted to permit adjustment of the arm 30 to any predetermined angle when loosened and to hold the arm 30 at such an angle when tightened.

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The forward end of the mounting arm 30 is provided with a pair of spaced apertures 34 to accommodate a pair of bolts 35 with knurled heads 36. Mounted on the underside of the front end portion of the arm 30 by means of these bolts 35 at slots 30a provided therein, is a pair of plates 37 having registering depending portions 38. Each of the depending portions 38 has an aligned aperture through which a relatively long screw-tightener 39 extends. When loosened this screw-tightener 39 will accommodate a pair of mounting clamps 40 each of which has a slot 41 formed in its horizontal portion. When tightened the screw-tightener 39 will draw these clamps 40 together to firmly hold a hair clipper blade 42 therebetween.

In operation the tool or blade desired to be sharpened may be mounted directly between the channel strap 26 and the plate 27 by removing the wing bolts 28 and 33 and substituting the same for the mounting arm 30 or it may be mounted on the arm 30. The former is true, of course, only when sharpening a tool such as a hand plane blade or a similar tool which has a longitudinally extending slot similar to the slot 31 in the mounting arm 30. If the tool or blade desired to be sharpened is of a different nature it may be secured to the end of the mounting arm 30 by means of the mounting clamps 40 with their screw-tightener 39. It is obvious of course, that clamps shaped otherwise than those shown as clamps 40 may be used to grip securely any tool desired to be sharpened. Once the tool desired to be sharpened has been secured to the carriage 15 in the manner just described, the tool or the mounting arm carrying the tool should be adjusted to the desired angularity with respect to the abrasive 13. The sharpened edge of the tool may be brought into registration with the abrasive 13 by loosening the upper portion of the carriage 15 and tipping it forwardly. If the tool or blade has been previously sharpened at a predetermined angle the upper portion of the carriage 15 should be tilted forwardly until the narrow slot 23 is directly above the predetermined angle as indicated on the angle measuring element 22, thereafter the wing bolt 33 should be loosened and the tool or the mounting arm 30 should be moved longitudinally until the sharpened edge registers with the abrasive 13. This will insure that the new edge will have the desired angularity and will therefore prevent waste of the main body of the tool itself as a result of sharpening. The above instructions apply for setting a tool or blade the sharpened edge of which extends at right angles to the length of the tool or blade. It can be readily seen of course, that once the device has been properly set it is an easy matter to sharpen the tool or blade by causing the carriage 15 to reciprocate with respect to the tracks 9 and 10.

When a tool or blade the sharpened edge of which extends at an angle to the length of the tool is desired to be sharpened, the tool is mounted as described above. However, prior to commencing the sharpening operation, wing bolt 33 is loosened and the blade to be sharpened, or the mounting blade 30 holding the blade, may be swung to either side to the exact predetermined angle to which the blade was previously sharpened. Thus if a tool has a sharpened edge which extends at an angle of 45 degrees to the length of the blade, the mounting arm 30 should be swung to the side, until the pointer element

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32 is opposite the 45 degree mark on the angle measuring element 29. Once this has been accomplished the blade may be readily sharpened at the exact predetermined angle by similarly causing the carriage 15 to move backwardly and forwardly over the tracks 9 and 10.

When it is necessary to sharpen a hair clipper blade or the like the plate 42 is inserted between the clamping means 40, and the screw-tightener 39 is tightened. Thus the plate 42 will be firmly secured at the end of the mounting arm 30, but it will be free to rotate on the axis of the screw-tightener 39 to permit the blade to be oriented in flat registering relation with the abrasive, a relation which is of great importance in sharpening clipper blades and the like. The upper portion of the carriage 15 is then tilted forwardly until the lower surface of the plate 42 is in such flat registering relation with the abrasive 13. The wing bolts 19 are then tightened and the clipper plate 42 may be readily sharpened by moving the carriage 15 backwardly and forwardly. The slots 41 have been provided to accommodate the type of clipper blade which is mounted on a small plate by means of a pair of screws. It should be noted that the clamping means 40 shown is adjustable in size since the upper portions thereof may be inserted between the depending portions 38 of the mounting plates 37.

One of the principal advantages of my invention is that it provides a mounting structure or carriage which permits the user to sharpen practically any type of blade or tool at an exact predetermined angle. This is true whether the sharpened edge of the tool or blade lies straight across the tool or extends at an angle thereto. Since it is possible to sharpen such a blade at a predetermined angle my invention saves time and effectively eliminates the waste and inaccuracy normally involved in attempting to sharpen a tool at a given angle by manually holding the same. When using my invention the operator is assured of a cutting edge of the most desirable form or angulation. It can be readily seen that it is very important that a tool which has once been sharpened at a given angle should, when sharpened the next time, be sharpened at exactly the same angle. It is possible to sharpen turn lathe chisels, straight chisels, clipper blades, jointed blades and similar cutting tools with a minimum of time and inconvenience when using my invention.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departing from the scope of my invention.

What I claim is:

1. A hair clipper sharpening device comprising a guideway, an abrasive mounted adjacent said guideway, a carriage frame mounted on said guideway for reciprocating movement relative thereto, at least a portion of said frame being tiltable relative to said guideway in a vertical plane extending parallel to the line of said movement, measuring means for accurately indicating the extent to which said portion of said frame is tilted, a carriage arm mounted on the tiltable portion of said frame and extending therefrom and depending clamping means carried by one of the end portions of said arm for releasably securing thereto the blade of the hair clipper in registering relation with said abrasive during said

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reciprocal movement, said clamping means being rotatable on a substantial horizontal axis whereby said blade may be oriented in flat registering relation with said abrasive regardless of the thickness of said blade and including a pair of end-engaging clamp elements adapted to engage the blade by inward pressure upon its ends.

2. A hair clipper sharpening device comprising a guideway, an abrasive mounted adjacent said guideway, a carriage frame mounted on said guideway for reciprocating movement relative thereto, at least a portion of said frame being tiltable relative to said guideway in a vertical plane extending parallel to the line of such movement, a carriage arm mounted on the tiltable portion of said frame and extending therefrom, and having a free end, a pair of mounting plates secured to the free end of said arm and having registering depending portions extending longitudinally of said arm, a pair of clamps adapted to engage the ends of the clipper blade and having upstanding portions extending along opposite sides of said depending portions of said mounting plates, and threaded tightener mechanism extending through said depending portions and said upstanding portions whereby said clamps may be caused to securely engage the ends of the blade.

3. The structure defined in claim 2, said mounting plates being adjustably secured to said arm for transverse movement relative thereto whereby the depending portions of said plates may be moved apart and the upstanding portions of said clamps may be inserted therebetween prior to tightening said tightener mechanism to permit said clamps to accommodate clipper blades of various widths.

4. Mounting apparatus for use in the sharpen-

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ing of tools, blades and the like comprising a guideway having a pair of spaced relatively wide tracks, an abrasive member mounted between said tracks and extending longitudinally thereof, a carriage frame extensible in width mounted upon said guideway and adapted for reciprocating longitudinally of said guideway, said carriage frame including roller elements engaging said tracks and narrow in width relative to the width of the individual tracks to permit said frame to be readily extended in width, at least a portion of said frame being tiltable relative to said guideway in a vertical plane, and mechanism mounted on the tiltable portion of said carriage frame for removably securing tools, blades and the like thereto for sharpening the same while said carriage reciprocates relative to said abrasive member.

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