

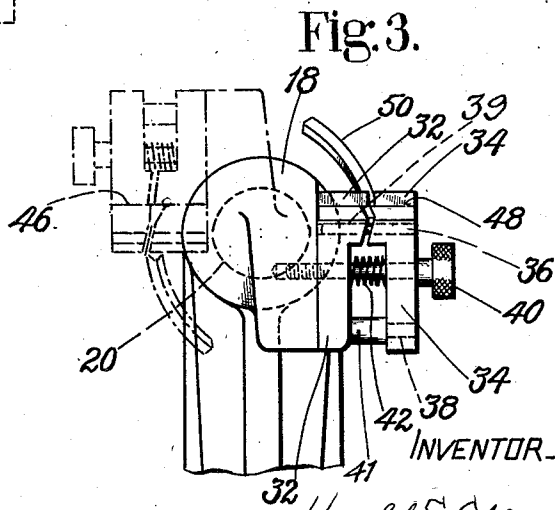
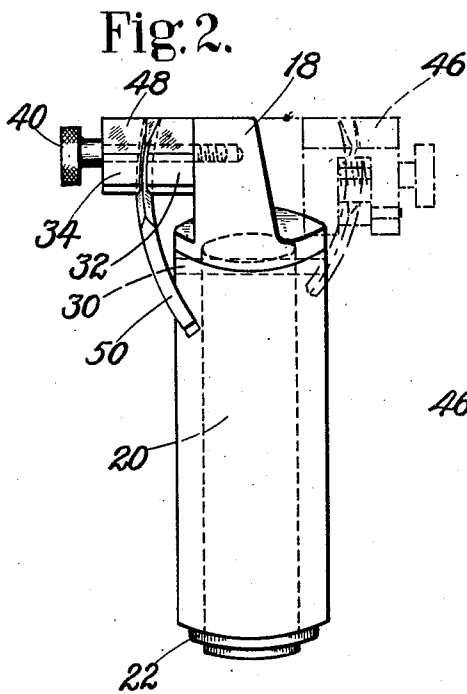
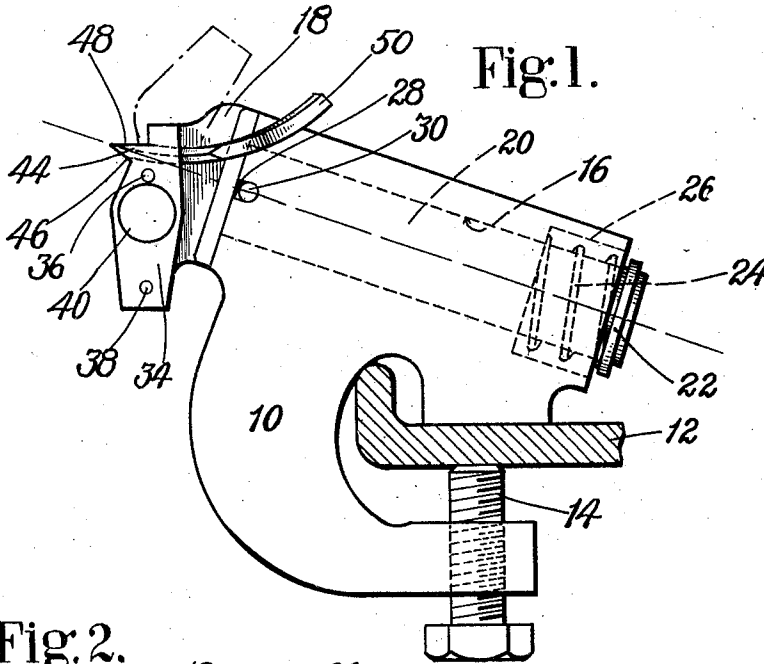
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DEVICE FOR HOLDING CUTTING TOOLS

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DEVICE FOR HOLDING CUTTING TOOLS

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This invention relates to devices for holding cutting tools and is herein illustrated as embodied in a device of the general type disclosed in United States Letters Patent No. 1,662,905, granted March 20, 1928, upon application of T. H. Seely and L. W. Rollins.

The device disclosed in the patent above referred to comprises sections adapted to be brought together and to grip a cutting tool and retain it in position for the convenient performance of filing or other abrading operation on the tool, the sections being formed with templet faces for guiding the file or other abrading element to control the abrading operation. These devices are especially designed to hold tools having oppositely beveled faces forming chisel-like cutters, such as certain common types of sewing machine awls. In the use of such holders or fixtures it is important that the tool to be sharpened occupy a favorable position from the standpoint of the convenience of the operative to facilitate accurate work.

In view of these considerations it is an object of this invention to provide an improved fixture of the type above mentioned by the employment of which the sharpening of cutting tools will be still further facilitated without sacrificing any advantages characteristic of such devices. In various respects, however, the invention is not limited to incorporation in a device of this type.

For the attainment of this object the present invention provides, in accordance with one feature, a fixture for supporting a curved awl while it is being sharpened, the fixture comprising a holder arranged for oscillation about an axis so positioned that a line tangent to the curved axis of the awl at the point of the awl will lie in the same plane as the axis of oscillation when the awl is in any one of a plurality of positions. Preferably, the surfaces to be sharpened are successively positioned face up in substantially the same horizontal plane. Thus the operative may look directly down upon his work thereby facilitating convenience and accuracy of operation.

In the illustrated embodiment of the invention a support or fixture, especially designed

to position and hold the oppositely beveled faces of a sewing machine awl of the type referred to, is so constructed and arranged that these surfaces may be brought one after another into the desired position merely by rotative movement of the work-holding means. This organization permits the operative to position the awl to be ground to the best advantage readily and without appreciable loss of time and obviates the liability of performing sharpening operations awkwardly and inaccurately or otherwise disadvantageously.

These and other features and advantages of the invention will appear from a consideration of the following specification and drawings of the illustrative construction, in which

Fig. 1 is a side elevational view of the fixture;

Fig. 2 is a plan view of the mechanism shown in Fig. 1, showing in dotted lines the work holder in inverted position; and

Fig. 3 is a front elevational view of the mechanism shown in Fig. 1 also showing in dotted lines the work holder in inverted position.

The numeral 10 indicates a casting or body member adapted to be secured to a support 12 by means of a set-screw 14. This body member contains a bore 16 disposed at an angle to the horizontal, the purpose of which disposition will be hereinafter explained. Mounted within the bore for rotation therein is a member comprising a head 18 and cylindrical shank 20 formed integral therewith. The shank member 20 is bored diametrically close to the head 18 to receive a pin 30 of which the ends engage a pair of slots 28 located in the body member 10. At the opposite end of the shank member from the pin a compression spring 24 is confined within an enlarged portion 26 of the bore by a collar 22 fast upon the end of the shank 20. With the end of the pin 30 engaged in the slots 28 the shank part is locked in one of two positions. The rotary member may be pulled out by hand against the pressure of the spring 24 so that the pin 30 is freed from the slots 28 and then the rotary member

may be turned by hand through 180 degrees to bring it into a new position, illustrated by the dotted lines in the drawings.

For supporting the tool to be ground there are provided work-retaining means comprising clamping members 32, 34 illustrated as adapted to hold a chisel edge tool having two bevels to be trued such as the sewing machine awl 50. The member 32 is fixedly secured upon the head 18 and is provided with a laterally extending pin 41 and a hollow depression 39. The clamping block 34 is provided with a bore 38 adapted to be inserted over the shoulder pin 41 and this clamping block also carries a projecting pin 36 adapted for engagement with the depression 39. A shoulder screw 40 extends through the clamping members and has screw-threaded engagement with the head to control adjustment of the clamping members relatively to each other. As shown in Fig. 3, the opposite interior faces of the clamping members are provided with grooves formed to correspond to and to receive the corners or edges of the cutting tool 50 while in its inserted position. The shoulder pin 41 provides means to prevent the lowermost part of the clamping members from collapsing upon clamping pressure being applied by means of screw 40. A spring 42 surrounds the screw 40 and engages the opposite interior faces of the clamping members to insure their release from the cutting tool upon the relaxing of the clamping pressure.

Each of the clamping members 32 and 34 is provided with a similarly disposed pointed wedge-shaped projection or ridge 44 through one end of which the groove for holding the cutting tool 50 is continued. The faces 46 and 48 of each ridge are disposed at an angle equivalent to the angle that it is desired to impart to the cutting edge. These faces form abrader-guiding surfaces and in the position illustrated in Fig. 1 it will be seen that the fixture has been constructed in such a manner that the faces 48 are disposed in a horizontal plane facing upwardly. To insure that, upon rotating the shank member 20 through 180 degrees, the second pair of guide surfaces 46 will also be located in substantially a horizontal plane facing upwardly, the axis of the shank or rotating member 20 is disposed at an angle to the horizontal equal to one half the angle that it is desired to impart to the cutting edge and consequently at an angle equal to one half the angle between the beveled faces of the ridge or wedge-shaped projection 44.

The rotary member being first held by the spring-controlled pin-and-slot connection in a position such that one of the abrader-guiding surfaces is horizontal, as above indicated, one of the bevels of the cutting tool 50 may be trued in full and convenient view of the

operator. The disposition of the rotary shank member at an angle equal to one half the angle it is desired to impart to the cutting tool provides equally convenient means for truing of the other bevel with the tool in the same horizontal plane as before occupied. This is obtained by pulling the rotary member out by hand and then rotating it through 180 degrees to bring the face 46, which has been underneath, uppermost and horizontal.

To enable the cutting tool held in the clamping blocks freely to clear the body member as it rotates between either of its two positions, the clamping members are offset from the axis of rotation. It will be seen, then, that in either position of the device as illustrated the cutting tool is held for treatment in a position such that the line tangent to the curved axis of the awl at its pointed end lies in the plane of the axis of the shank of the rotary member and vertically level with but horizontally offset therefrom.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In an awl-supporting fixture, a work holder having a two-part angular ridge forming guiding surfaces, said holder being mounted for oscillatory movement, and means for holding a curved awl between the parts of the ridge in such a position that a line bisecting the angle formed at its pointed end, and tangent to the curved axis of the awl, lies in the same plane as the axis of oscillation of the holder and is horizontally offset therefrom.

2. In an awl supporting fixture, a holder for a curved awl, means for clamping an awl in the holder, a fixed axis about which the holder may oscillate, and means for securing the holder in any one of a plurality of positions into which it may be oscillated, each of said positions of the holder so positioning the awl that a line tangent to the curved axis of the awl at the point of the awl will be in the same plane as the axis of oscillation.

3. In an awl supporting fixture, a holder for a curved awl, means for clamping an awl in the holder, a fixed axis about which the holder may oscillate, and means for securing the holder in either one of two diametrically opposite positions into which it may be oscillated, the parts being so constructed and arranged that a line tangent to the curved axis of the awl at the point of the awl when the awl is in one of said positions, a similar line when the awl is in the other position, and the axis of oscillation, all lie in the same plane.

In testimony whereof I have signed my name to this specification.

HAROLD ERNEST ELLIOTT.