March 18, 1952 H. FUHR 2,589,489

COMBINATION WORK POSITIONING AND HOLDING TOOL FOR LAYOUT AND LIGHT FINISHING OF WORK

Filed Nov. 25, 1949

Fig. 1.

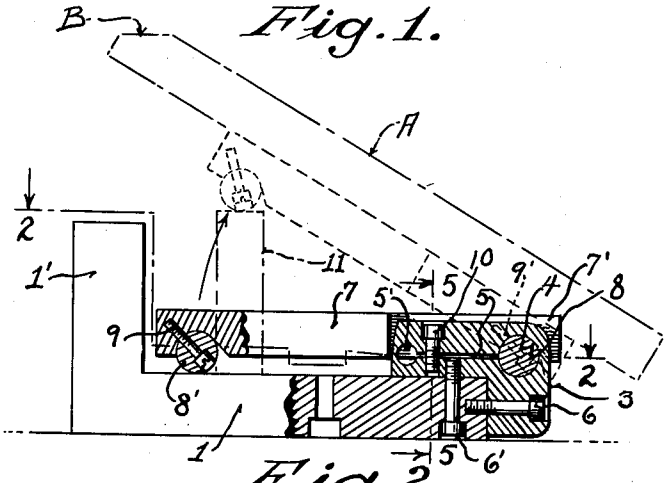


Fig. 3.

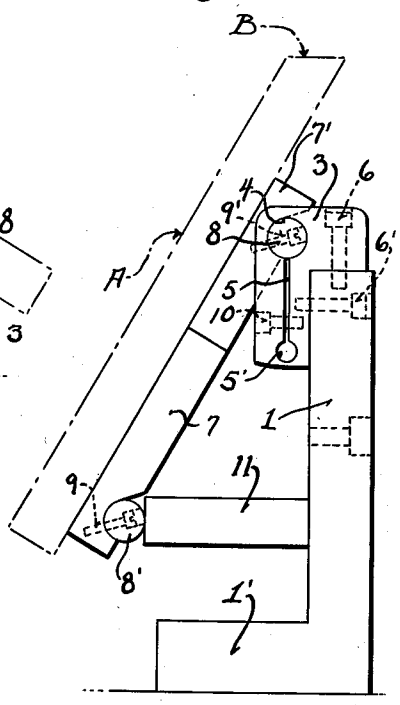


Fig. 2.

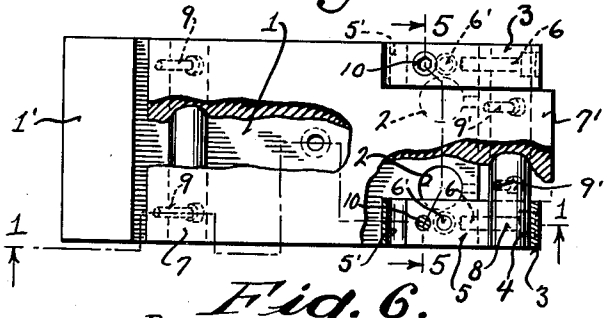


Fig. 6.

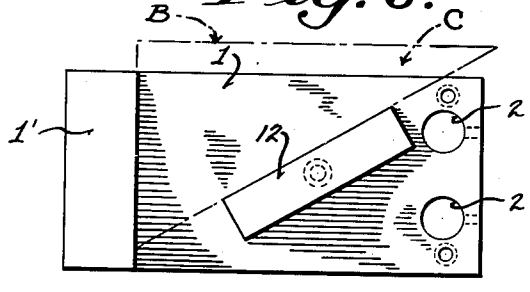


Fig. 4.

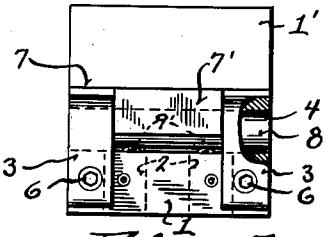


Fig. 5.

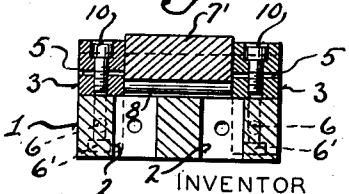
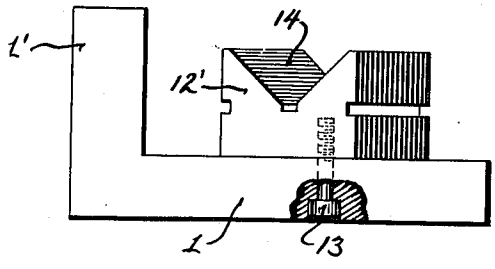


Fig. 7.



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COMBINATION WORK POSITIONING AND HOLDING TOOL FOR LAYOUT AND LIGHT FINISHING OF WORK

Henry Fuhr, Milwaukee, Wis.

Application November 25, 1949, Serial No. 129,444

1 Claim. (Cl. 51—217)

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My invention refers to work holders for grinders or the like.

The primary object of my invention is to utilize a base block or vises, having a right angle jaw, as a holder for a standard "sine-plate," whereby the sine-plate may be accurately set and locked at different angles for carrying a work piece, clamped to said sine-plate, whereby the face of a work piece is properly ground at the desired angle.

The base block embodies one of the elements of a vise, such as shown in my Patent Number 2,484,338, dated October 11, 1949. When the base block is utilized as a work holder, it is understood that the vise equipment is removed therefrom.

Another object of my invention is to provide an angle foot pivoted to the upper face of the base block, whereby the work piece may be ground vertically by shifting the position of the base block from its bottom to its side as a rest support.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the novel construction, combination and arrangement of parts, substantially as hereinafter described, and more particularly defined by the appended claim, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claim.

In the accompanying drawings is illustrated one complete example of the physical embodiment of the present invention constructed according to the best mode so far devised for the practical application of the principles thereof.

In the drawings:

Figure 1 represents a sectional elevation of a base block and associated sine-plate, embodying the features of my invention, the section being indicated by line 1, 1 of Figure 2.

Figure 2 is a plan view of the same with parts thereof broken away and in section, the parts in section being taken on the line 2, 2 of Figure 1.

Figure 3 is a side elevation of my invention showing the same, utilizing the jaw end of the base block as a support.

Figure 4 is a rear view of the base block and associated journal boxes.

Figure 5 is a cross sectional view of the same, the section being indicated by line 5, 5 of Figures 1 and 2.

Figure 6 is a plan view of the base block having fitted thereto a pivotally adjustable angle shoe; and

Figure 7 is a side elevation of said base block,

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having pivoted thereto an angle shoe provided with a pipe gripping jaw, not in a working position.

Referring by characters to the drawings, 1 indicates a rectangular base block having an upstanding jaw 1'.

The base block, as shown in Figure 6 of the drawing, is provided with post receiving apertures 2 adapted to engage a vise jaw mechanism which forms no part of my present invention.

The rear end of the base block has fitted thereto a pair of right angle journal boxes 3, 3, having aligned bearing apertures 4.

The bearing apertures are provided with horizontally disposed kerfs 5 intersecting apertures 5' formed in the boxes, whereby a certain amount of resiliency is developed.

The bearing boxes are secured to the end of the base block by countersunk screws 6, 6'.

Adjustably mounted upon the upper face of the base block is a rectangular sine-plate 7 of standard type, which sine-plate is provided with a tail piece 7' that is fitted between the journal boxes 3.

The tail piece has partly embedded therein a circular rod 8, which rod extends beyond the tail piece and is rotatably mounted in the bearing apertures 4 of the boxes. The front end of the sine-plate is also provided with a circular rod 8' nested within said sine-plate and secured in its seat by bolts 9, the rear circular rod 8 being also secured to the sine-plate by bolts 9'.

As best indicated in Figure 1 of the drawings, the kerf 5 of each bearing box is provided with a countersunk bolt 10, which bolt is adapted to exert a binding pressure upon the rod 8, whereby the sine-plate may be adjusted at various angles and frictionally held in said adjustment.

From the foregoing description, it is apparent, as indicated in dotted lines, Figure 1 of the drawings, to position a piece of work A upon the sine-plate, at the desired angle, the said sine-plate is adjusted to the desired angle, indicated in dotted lines, thereafter, the plate is frictionally gripped upon the rod 8 and held by the bolt 10.

In order to provide a firm base for the plate, I provide a supporting leg 11 which is interposed between the base and the rod 8', it being understood that the supporting leg 11 may vary in length. Thus, the work A, which is secured to the sine-plate by any type of clamp is then at the angle desired for grinding off the edge indicated by B in dotted lines, Figure 1. When the base block is resting upon its bottom, as shown in

Figure 1, the work piece may be adjusted to any angle up to 45 degrees.

However, if the angle of adjustment is to be above 45 degrees, the base block is simply tipped in a vertical direction, as shown in Figure 3, whereby said block rests upon the bottom of the jaw 1', and in this position the steep angle of the work piece may be micromically set from 45 degrees upwardly.

In other words, all angles are obtained by simply changing the support of the base block from its bottom surface to the bottom surface of the vise jaw 1'.

As illustrated in Figure 6 of the drawing, for example, a triangular work piece C as indicated in dotted lines, is positioned to be worked upon.

In this instance the base block is seated upon one edge thereof and said block is fitted with an angle shoe 12, which shoe is secured to the face of the block by a set screw 13, whereby the angle of the shoe is varied. Hence, the triangular work piece is supported upon one face of the angle shoe and a vertical face of the jaw 1', whereby its horizontal face is positioned parallel and above the base block for grinding.

As illustrated in Figure 7 of the drawings, when it is desired to grind a tubular work piece, I provide an angle shoe 12' having a V-shaped seat 14 for the reception of a tubular work piece, and in view of the fact that the shoe 12' is held in its adjusted position by the bolt 13, any desired angle may be obtained. It is also understood that when the work is seated to the base block, as shown in Figures 6 and 7 of the drawing, the said work is also clamped to the shoe by any well-known device, not shown.

I claim:

A work holder for grinders or the like comprising a rectangular base block terminating at one end with a right-angularly disposed short jaw, a pair of spaced transversely aligned bearing boxes secured to the opposite end of the base block and having journal apertures therein, a sine-plate having a tail piece fitted between the bearing boxes, a circular rod seated in the rear portion of the tail piece and secured to the plate, the circular rod being provided with projecting ends fitted into the journal apertures of the bearing boxes, the bearing boxes each being split for a predetermined distance from said journal apertures to open out on a transversely enlarged opening extending parallel to said journal apertures to permit yield, a pair of bolts each extending through the split portion of a bearing box for contracting the boxes about the circular rod when the sine-plate is adjusted at an angle relative to the base block, a second circular rod partially embedded in the front portion of the sine-plate and secured to the under-surface thereof, and a supporting foot seated upon the face of the base block and engaging the surface of the second circular rod, the base block being adapted to rest horizontally upon its lower surface or vertically upon the outer surface of the right-angularly disposed jaw, whereby various angles may be obtained for positioning the work piece.

HENRY FUHR.

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