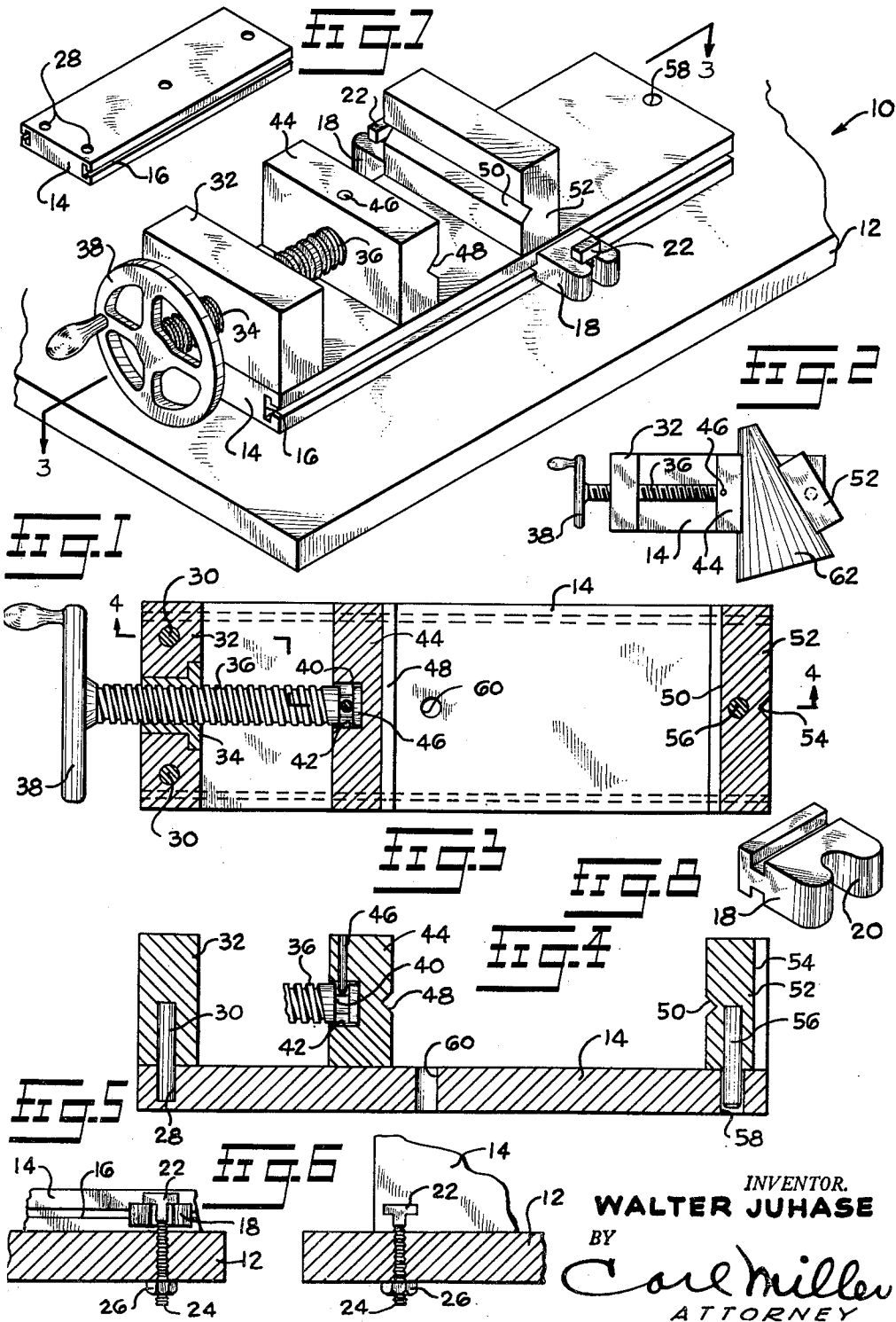


Aug. 28, 1962

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HAND VISE FOR DRILL PRESSES, MILLING MACHINES
AND SURFACE GRINDERS
Filed Jan. 5, 1960

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HAND VISE FOR DRILL PRESSES, MILLING MACHINES AND SURFACE GRINDERS

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Filed Jan. 5, 1960, Ser. No. 598

2 Claims. (Cl. 269-95)

This invention relates to tools and more particularly to a hand vise for machine tools.

It is often necessary to secure a work piece in a fixed position upon the bed of a drill press, milling machine, or surface grinder. It is therefore an object of the present invention to provide a compact and conveniently operated hand vise which will accomplish this purpose in a simple and efficient manner.

Another object of the present invention is to provide a hand vise for various machine tools which is easy to manipulate, position upon the bed of the machine, and which can rigidly support regular and irregular shaped objects.

Still an additional object of the present invention is to provide a vise of the type described which can be made in any desired size, and which can be manufactured in large quantities at a relatively low cost.

All of the foregoing and still further objects and advantages of this invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing, wherein:

FIGURE 1 is a perspective view of a hand vise made in accordance with the present invention in actual use;

FIGURE 2 is a top plan view of the device shown in FIGURE 1 in actual use with an irregularly shaped object;

FIGURE 3 is a longitudinal cross sectional view taken along line 3-3 of FIGURE 1;

FIGURE 4 is a longitudinal cross sectional view taken along line 4-4 of FIGURE 3;

FIGURE 5 is a fragmentary cross sectional view of certain parts of the device shown in FIGURE 1;

FIGURE 6 is a view similar to FIGURE 5, on an adjacent side of the assembly;

FIGURE 7 is a perspective view of a base forming a part of the present invention; and

FIGURE 8 is a perspective view of an anchor device forming another part of the present invention.

Referring now to the drawing, a hand vise 10 made in accordance with the present invention is an improvement over the vise of U.S. Patent 2,889,757 that was issued June 9, 1959 to D. J. Cole and is shown to include a substantially rigid base 14 having T-shaped slots 16 along each longitudinal edge, each such slot 16 slidably receiving an anchor slide 18 having an outwardly facing recess 20.

Bolt type anchors 22 have threaded shafts 24 that are received within the recesses 20 of the anchor slides 18, the heads 22 overlying the top of the anchor slides 18, and the opposite ends thereof extending through openings in the bed 12 of the machine for threaded engagement with securement nuts 26. Thus, it is possible to position the base 14 of the vise in any desired position upon the bed 12 of the machine.

A pair of mounting pins 30 are press fit into laterally spaced apart openings 28 at one end of the base 14 for connection to a block 32 having an internally threaded bushing 34 extending through the center thereof. An operating shaft 36 is threadedly carried within the bushing 34 and has a handle 38 at one end. The opposite end of the shaft 36 is provided with an annular groove 40 and is received within an opening 42 in a movable jaw 44 slidably supported upon the base 14 for reciprocating longitudinal movement in response to rotation of the threaded shaft 36 within the bushing 34 of the stationary jaw 32. The face of the movable jaw 44 is provided with a V-shaped trans-

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versely extending groove 48 that faces a similarly shaped groove 50 in one face of a pivoted jaw 52. The pivoted jaw 52 is provided with a hinge pivot pin 56 which may be selectively inserted into either one of a pair of longitudinally spaced apart bearing openings 58, 60 in the base 14, depending upon the size of the work piece which is being fitted between the movable jaw 44 and the pivoted jaw 52 under certain circumstances. The opposite side of the pivoted jaw 52 is provided with a V-shaped groove 54 that extends in a direction perpendicular to the direction in which the transversely extending V-shaped groove 50 of the pivoted jaw extends.

In actual use, a work piece may be clamped between the block 32 and the movable jaw 44, or may be placed between the faces of the movable jaw 44 and the pivoted jaw 52. This arrangement is particularly useful for grasping irregularly shaped objects, such as that 62 shown in FIGURE 2, in which the pivoted jaw 52 will readily accommodate itself to the configuration of the object. In either event, the tightening of the work piece between the jaws or jaw 44 and block 32 is facilitated by rotation of the handle 38 and the operating shaft 36, which controls the distance and the clamping action between the block 32 and the movable jaw 44 or between the movable jaw 44 and the pivoted jaw 52.

While this invention has been described with particular reference to the construction shown in the drawing, it is to be understood that such is not to be construed as imparting limitations upon the invention, which is best defined by the claims appended hereto.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A hand vise that is positionally connected to a machine, comprising a base, a block connected to the base at one end thereof and having a threaded opening there-through, a screw extending through and threadedly engaging the threaded opening to move axially along the base as it is rotated, a jaw supported on the base and connected to the end of the screw to be moved along the base by axial movement of the screw, the jaw and block having coextensive faces for holding objects therebetween, the jaw having a second face with a gripping groove therein, and another jaw pivotally connected to the base at its end opposite the block, the pivotal jaw having a pair of faces each coextensive with and cooperable with the grooved face of the jaw connected to the screw for holding an object clamped between the jaws, each face of the pivotal jaw having a groove wherein one groove is parallel to the groove of the jaw connected to the screw and the other groove is normal thereto.

2. The vise according to claim 1 wherein the base has a hole at its end opposite to the block and at least one other hole spaced therefrom and closer to the block, the pivotal block having a pin depending therefrom and disposed in one of the holes of the base to pivotally mount the pivotal jaw thereon.

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