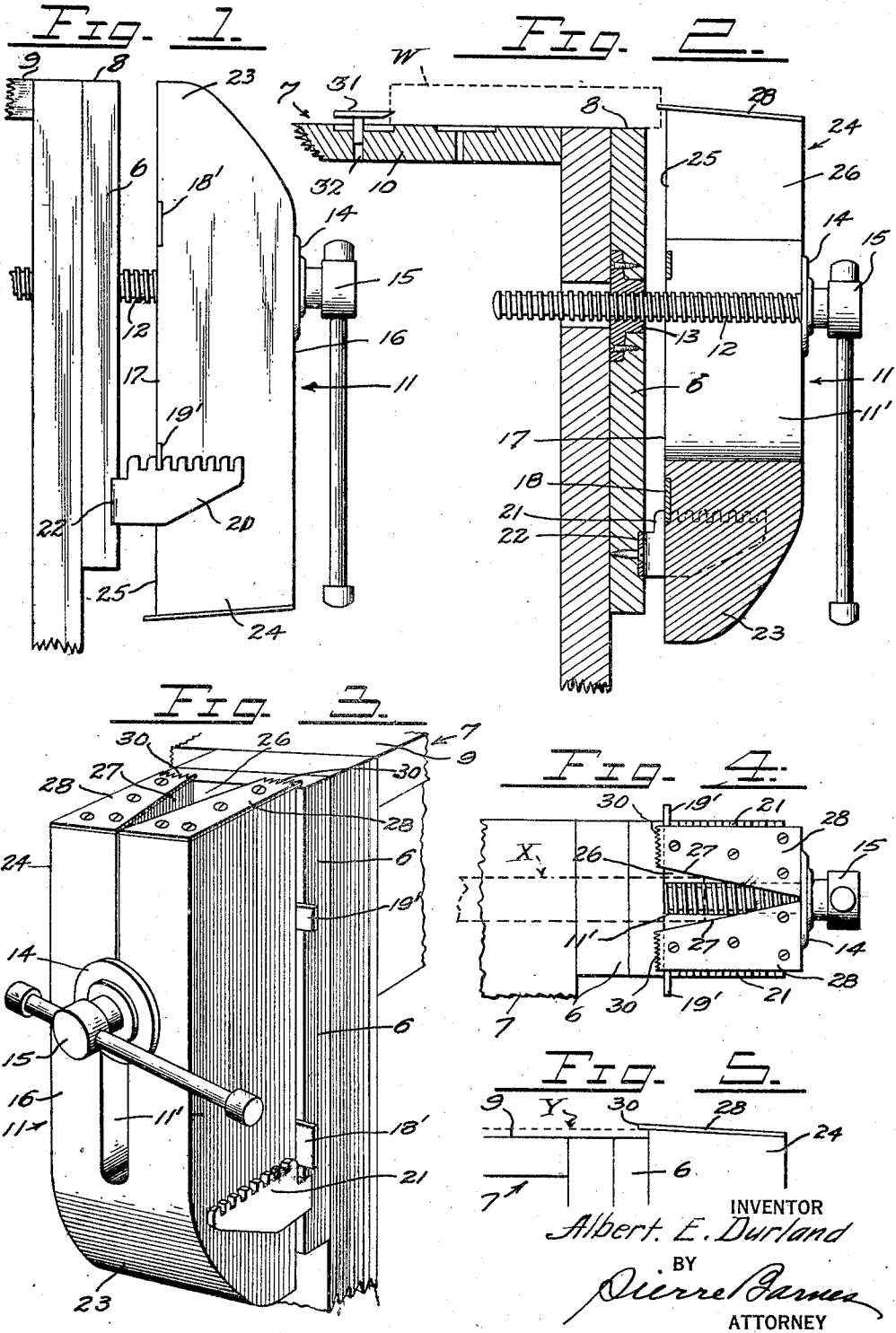


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COMBINED BENCH STOP AND VISE

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COMBINED BENCH STOP AND VISE.

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This invention relates to carpenter's bench-vises.

The main object of the invention is to provide a carpenter's vise which will be better adapted than vises hitherto in use for holding different kinds and sizes of work in positions to be planed or otherwise operated upon.

Another object is the provision of a vise thus characterized which will be of simple, durable and inexpensive construction and most efficient in operation.

Other more specific objects will appear in the following description.

The invention consists in the novel construction, adaptation and combination of parts hereinafter described and claimed.

In the accompanying drawing,—

Figure 1 is a side elevation of a vise embodying my invention shown applied to an end of a work bench. Fig. 2 is a vertical longitudinal section of the same with the movable vise jaw in a position inverted to that in which it is represented in Fig. 1. Fig. 3 is a perspective view of the vise and a portion of the bench illustrated in the preceding views, the movable jaw being represented in its inverted position. Fig. 4 is a plan view of Figs. 2 and 3. Fig. 5 is a fragmentary side elevation of the bench and vise jaws.

In said drawing, the reference numeral 6 represents a jaw member, hereinafter termed the fixed jaw or jaw member which is rigidly connected to an end of a work bench 7; the top 8 of said jaw being in a plane with or slightly below the upper surface 9 of the bench top 10.

The movable jaw member 11 of the vise is provided intermediate its length with a slot 11¹ through which extends a bench-screw 12 engaging in a nut 13 which is rigid with the bench or secured, as shown in Fig. 2, to the fixed jaw 6.

14 represents a collar loosely mounted upon said bench screw, between the screw head 15 and the outer surface 16 of the movable jaw-member.

Secured in vertically spaced apart relation to the rear side 17, preferably, of the member 11 are horizontally arranged metal bars 18 and 19 having their protruding ends 18¹ and 19¹ engageable in selected gullets of

toothed arms 21 of a bracket 22 which is rigidly secured to the fixed jaw member 6.

Said bracket and bars 18—19 serve cooperatively to support the member 11 when employing either of its jaw ends 23 or 24 uppermost, to maintain the member 11 substantially parallel with and at a selected distance from the fixed jaw member 6. The arms 20 also serve as guides with respect to the member 11, preventing the latter from rotating about the screw 12 which may be accomplished by withdrawing the member 11 from between said arms.

The jaw element 23 of the member 11 is preferably solid with a plane inner face 25; the other jaw 24 is bifurcated to provide a notch 26 having vertical side walls 27 arranged in angular relation with each other and converging from the rear surface 25 to the outer surface 16 of the member 11. Secured to the extremity of each bifurcation of the jaw 24 is a plate 28 whose opposing inner edge (Figs. 3 and 4) are disposed in the planes, preferably, of the wall surfaces 27 of the respective branches. The rear edges 30 of said plates project outside the rear surface 25 of the member 11 and are serrated as shown in Figs. 3 and 4.

The operation of the invention is as follows:

When the member 11 is arranged as illustrated in Fig. 1, work may be clamped between the jaws 6 and 23 as usual with bench vises.

For work too large or otherwise unsuitable for clamping between the vise jaws, the movable member 11 is inverted from the position in which it is represented in Figs. 2 to 5 inclusive.

Thus arranged—that is to say, with the jaw 24 uppermost—the vise is employed as follows: For retaining a block or the like, as indicated by W, upon the bench, there is utilized a bench stop 31 of known construction which is secured as by means of its stem engaging in a suitably located hole, such as 32 for example, provided therefor in the bench top, such stop serving, in effect, as a supplementary jaw to cooperate with the jaw 24 of the member 11 when the latter is in a suitably elevated position as represented in Fig. 2, for example. For holding boards of various lengths to plane or other-

wise operate upon an edge thereof, the member 11 is held by means of the bench screw 12 in an elevated position to receive within its notch 26 the end of the board, indicated by dotted lines X in Fig. 4, such board end being jammed or wedged between the converging side walls 27.

In Fig. 5 I illustrate the manner of employing the vise to hold by its end a thin board, indicated by dotted lines Y, flatwise upon the top of the bench 7, the board end being engaged between the jaw plate-elements 28 and the top 8 of the vise member 6. In regulating the vise to thus function, the movable member 11 is suitably held by one hand of the operator while securing the same by means of the screw which is actuated by the operator's other hand.

The invention and manner of employing the same in some of its applications will, it is thought, be understood from the foregoing description.

What I claim, is,—

1. A vise consisting of a fixed jaw-member, a nut rigid with said member, a second jaw-member, a bench screw extending through the second member into engagement with the nut for effecting relative clamping actions of the members, said second named member being provided longitudinally thereof with a slot to receive said screw and permitting both rotary and endwise movements to said second member, and means rigid with said fixed jaw-member and engageable with both ends selectively of the second named member for holding the latter in a substantially vertical position.

2. In a vise having a fixed jaw-member, a clamping screw, a second jaw-member mounted upon said screw for rotary and radial movements with respect to the screw axis, and means secured to said fixed jaw-member for supporting the other jaw-member at certain elevations and with either of its ends uppermost.

3. In a vise having a fixed jaw-member, a clamping screw, a second jaw-member mounted upon said screw for rotary and radial movements with respect to the screw axis, and means secured to said fixed jaw-member for supporting the other jaw-member with either of its ends uppermost, said means also being adapted to cooperate with

said screw for maintaining the second named jaw-member in substantially vertical positions.

4. In a vise, a fixed jaw-member, a clamping screw, and a member rotatably mounted upon the screw to provide a jaw element at each end of the member, and a plate secured to the extremity of one of said jaw-elements and projecting from the rear surface of the second member.

5. In a vise, a jaw, a nut secured thereto, a second jaw bifurcated at one end thereof to provide a notch of a substantially V-shape, a plate secured to the extremity of each of the jaw bifurcations, and a clamping screw extending through the second jaw and engaging said nut, said second jaw being provided with a slot to accommodate said screw and permitting movement of the second jaw to position the notched end thereof above and below selectively the upper end of the first named jaw.

6. In a vise, the combination with the fixed jaw-member, of a movable jaw-member, a bench-screw for adjusting the movable jaw-member in work clamping relation with respect to the fixed jaw member, said movable jaw-member being provided with a slot to receive said screw and permitting vertical and rotary movements to the member, and means provided upon the fixed jaw member below said screw for supporting the movable jaw member in substantially parallel relation with respect to the fixed jaw-member and with either end selectively of the movable jaw-member uppermost.

7. In a vise, the combination of a fixed jaw-member, a bench screw, a nut therefor secured to said jaw-member, a movable jaw-member, a bracket secured to the fixed jaw-member, said bracket being provided with a serrated arm element at each side of the movable jaw-member, and means rigid with said movable jaw-member and engageable with said bracket arms for supporting said movable member, said means and the bracket arms also cooperating with said screw for retaining the movable jaw-member in substantially parallel relation with respect to the fixed jaw member.

Signed at Seattle, Washington, this 4th day of April, 1925.

ALBERT E. DURLAND.