Apr. 24, 1923. 1,452,847

J. A. QUINLAN

BENCH VISE

Filed Sept. 9, 1922

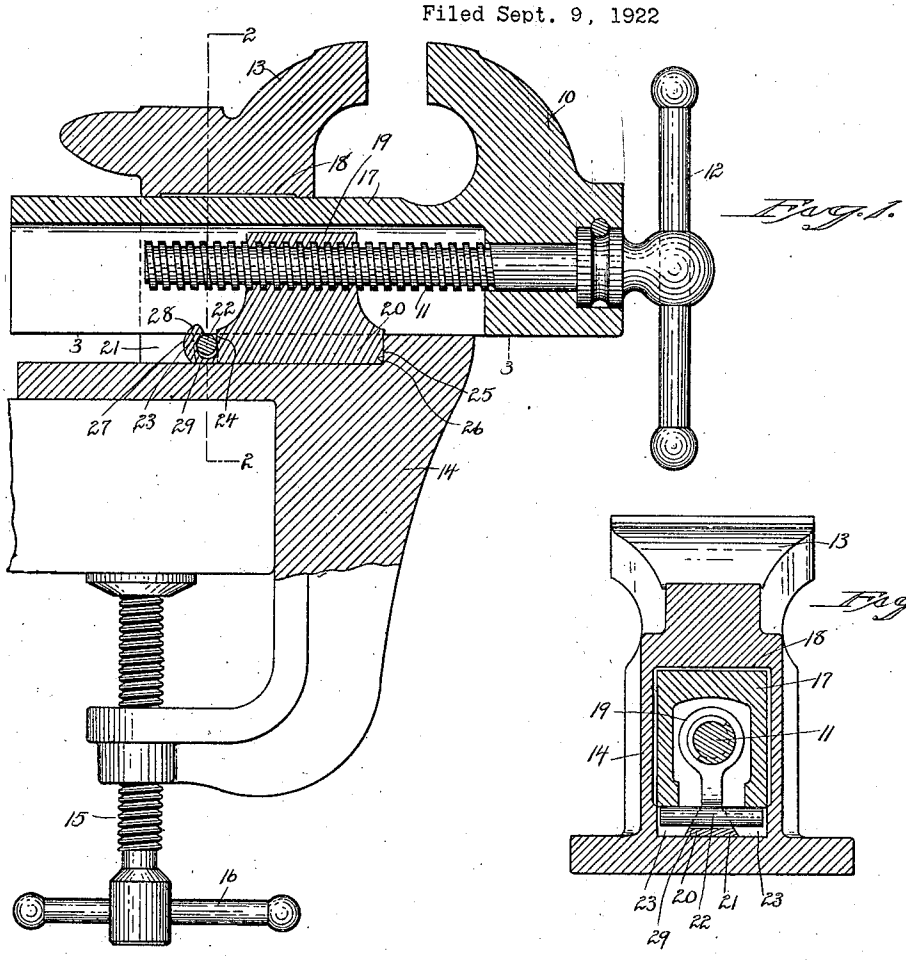


Fig. 1.

Fig. 2.

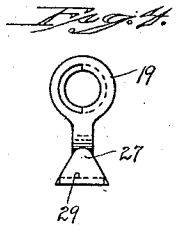


Fig. 4.

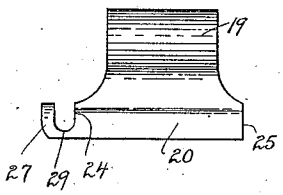


Fig. 5.

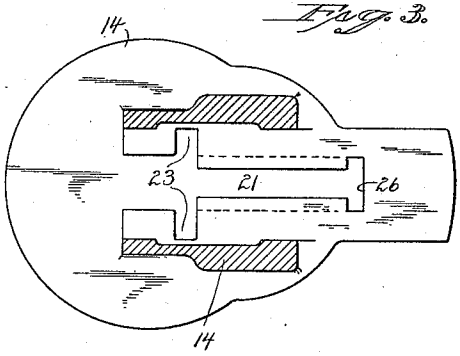


Fig. 3.

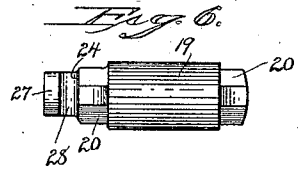


Fig. 6.

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UNITED STATES PATENT OFFICE.

JAMES A. QUINLAN, OF SOUTHINGTON, CONNECTICUT, ASSIGNOR TO THE PECK, STOW & WILCOX COMPANY, OF SOUTHINGTON, CONNECTICUT, A CORPORATION.

BENCH VISE.

Application filed September 9, 1922. Serial No. 587,094.

To all whom it may concern:

Be it known that I, JAMES A. QUINLAN, a citizen of the United States, residing at Southington, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Bench Vises; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this application, and represent, in—

Fig. 1 a view in vertical central section of a bench-vise constructed in accordance with my invention.

Fig. 2 a broken view thereof in vertical transverse section on the line 2—2 of Fig. 1.

Fig. 3 a view thereof in horizontal section on the line 3—3 of Fig. 1.

Fig. 4 a detached view in rear elevation of my improved nut which receives the operating-screw of the vise.

Fig. 5 a view thereof in side elevation.

Fig. 6 a plan view thereof.

My invention relates to an improvement in bench-vises, the object being to produce, at a reduced cost for manufacture, a simple and reliable vise constructed with particular reference to improved means for locking the nut of the operating-screw in place in the frame without the employment of a driven pin, which is liable to work loose and the use of which necessitates the coring of the frame of the vise.

With these ends in view, my invention consists in a bench-vise provided with a transversely-arranged locking-pin mounted in the vise-frame in position to be engaged by the rear end of the operating-nut of the vise. My invention further consists in a bench-vise having its operating-nut provided at its rear end with a transverse slot and flexible finger for the reception and retention of a transverse locking-pin, the ends of which are engaged with the frame of the vise, whereby the nut is held against displacement therein. My invention further consists in certain details of construction as will be hereinafter described and particularly pointed out in the claims.

In carrying out my invention, as herein shown, it is applied to a standard bench-vise having a sliding jaw 10, mounting an operating-screw 11, furnished at its outer end with a sliding, bar-like operating-lever 12, provided at its ends with retaining knobs. The said sliding jaw 10 coacts with a fixed jaw 13, formed integral with the upper portion of a vise-frame 14, the lower end of which is furnished with the usual clamping-screw 15 having an operating-lever 16. The sliding jaw 10 is formed as usual with a horizontal, chambered supporting-arm 17, rectangular in cross-section and fitting into and sliding in a rectangular bearing-opening 18 formed in the vise-frame 14 at a point directly below the fixed jaw 13 thereof. The operating-screw 11, aforesaid, is threaded into a nut 19, by preference made of malleable iron and formed at its lower end with a dove-tail rib 20 fitting into a dove-tail groove 21 formed in the bottom wall of the rectangular opening 18 aforesaid and parallel therewith.

Coming now to my present invention, it consists, as shown, in the employment of a transversely-arranged locking-pin 22, the ends of which are entered into notches 23 located directly opposite each other and leading out of the side walls of the groove 21, and so positioned that the middle portion of the pin will engage with an abutment 24 at the rear end of the nut when the forward end 25 thereof is engaged with the forward wall 26 of the groove 21, though it is not designed that the nut shall be rigidly held but only prevented from substantial endwise and sidewise play. By preference and as herein shown, the rear end of the nut is formed with a flexible pin-retaining finger 27, which, when the pin has been placed in position with its ends entered into the notches 23, is bent forwardly over upon the same, as shown at 28 in Fig. 1, for preventing its accidental displacement.

In assembling the device, it is only necessary to insert the dove-tail rib 20 of the nut 19 into the rear end of the dove-tail groove 21, and slide the nut forward therein until the forward end of its rib 25 abuts against the vertical forward wall 26 thereof. When the nut is thus positioned, the pin 22 is dropped into the notches 23, at which time its middle portion engages with the abutment 24 at the rear end of the nut. The flexible finger 27 of the nut is now bent forward over the pin, as shown in Fig. 1, whereby the ends of the pin are prevented from escaping from the notches 23, in case of the

removal of the sliding jaw and its arm 17 from the vise-frame 14, it being obvious that when the arm 17 is in place in the opening 18, the lower face of the said arm will close the upper ends of the notches 23, over which the arm rides, as clearly shown in Fig. 2. As thus made, the rear end of the nut is formed with a transverse slot 29 for the reception of the pin 22, but this is not essential, as the finger 27, produced by the said slot, might be dispensed with.

I claim:

1. In a bench-vise, the combination with a frame having a nut-receiving groove, the side-walls of which are formed with upwardly-opening notches, of a fixed jaw, a movable jaw, an operating-screw for the latter, a nut entered into the said groove and receiving the said screw, and a transversely-arranged locking-pin positioned in the said notches for engagement with the rear end of the nut, to hold the same against endwise displacement.

2. In a bench-vise, the combination with a frame having a nut-receiving groove, the side-walls of which are formed with notches, of a fixed jaw, a movable jaw, an operating-screw for the latter, a nut entered into the said groove, receiving the said screw, and formed at its rear end with a transverse slot, and a locking-pin entered into the said slot and notches, whereby the nut is held against endwise displacement.

3. A bench-vise having its frame formed with a nut-receiving groove and with oppositely-located retaining-notches leading out of the side-walls thereof, a fixed jaw, a movable jaw, an operating-screw for the latter, a nut located in the said groove, receiving the said screw, and having a transverse slot, and a transversely-arranged pin having its middle portion located in the said slot in the nut and its ends entered into the said notches.

4. A bench-vise having its frame formed with a nut-receiving groove, the side-walls of which are formed with notches, a fixed jaw, a movable jaw, an operating-screw, a nut located in the said groove, receiving the said screw, and formed at its rear end with a transverse slot and a flexible finger, and a locking-pin set into the said slot and held in place by the said finger and by the entrance of its ends into the said notches, whereby the said nut is held against endwise displacement.

5. A bench-vise having its frame formed with a nut-receiving groove and with oppositely-located notches leading out of the side-walls thereof, a fixed jaw, a movable jaw, an operating-screw, a nut located in the said groove, receiving the said screw, and formed at its rear end with a transverse slot and a flexible finger, and a locking-pin located in the said slot, entered at its ends into the said notches and secured in place by the said finger, which is bent over upon it.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

JAMES A. QUINLAN.

Witnesses:
GEORGE C. LILLEY,
L. P. BLOT.