

UNITED STATES PATENT OFFICE.

JOHN R. LONG, OF EAST AKRON, OHIO.

VISE.

SPECIFICATION forming part of Letters Patent No. 732,761, dated July 7, 1903.

Application filed December 22, 1902. Serial No. 136,148. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. LONG, a citizen of the United States, residing at East Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Bench-Vises; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in bench-vises; and the invention comprises an improvement especially upon the construction of vise shown in Letters Patent granted to me on the 11th day of November, 1902, No. 713,121, and the particulars of the improvement will be found substantially as herein shown and described, and particularly pointed out in the claims.

In the said drawings, Figure 1 shows a side elevation of the vise, and Fig. 2 a longitudinal sectional elevation thereof. Fig. 3 is a horizontal cross-section and plan view on a line corresponding to *xx*, Fig. 2. Fig. 4 is a perspective detail view of the locking member of the vise and hereinafter referred to as the "dog."

A represents a suitable base having an annular flange *a*, standing up from the bottom thereof and adapted to receive hub *b* of the so-called "fixed" member B of the vise. This member is referred to as fixed in contradistinction to member C, which is essentially the moving or movable member of the vise and which has a straight extension *c* projecting through the body of member B and adapted to move or travel or slide back and forth therein, according as it may be adjusted by screw D, and it may be observed that these parts are substantially as shown in the patent above referred to, excepting in the particulars which are more minutely hereinafter described.

The fixed member or jaw B is rotatable, as heretofore, in or upon base A, and the invention contemplates the temporary locking of the said member against rotation when the jaws are in clamping relation, which also broadly appears in the patent above mentioned; but in the said patent the dog E, pivoted at 2 in said main jaw, is constructed to make frictional contact itself at its heel with

the rim or flange *a* of the base; but it has been found desirable that the said dog should be constructed or provided with means at this engaging point which will render it more or less adaptable to certain conditions found to exist here—such, for example, as may require a closer or a wider space at this point for making engagement, according as one or the other may be found necessary in any given case. To this end I have constructed the dog E with an offset or recess 3 at its heel and occupied the said recess with a block or piece 4, secured by a screw 5 and intended to take all the bearing and wear that comes upon the dog at this point. Now having this adjustable piece in position, if I desire a closer engagement than the plate or block 4 alone provides I can insert a thin plate or one or more sheets of paper or the like behind the said block or piece and cause it to stand out as far as may be desired, and thus provide not only a very prompt engagement when the dog is tilted on its pivot 2, but limiting it to as little tilting as will serve my purpose and yet make effectual locking engagement through these means upon flange *a*. This is especially desirable in connection with the present construction of the top portion of the dog and the arrangement of the screw 2 therein as compared with my former construction. In the patent above referred to I provide a separate sleeve-nut for the screw, which is pivotally supported on the dog in order to accommodate the parts to the tilting movements thereof, and other constructions of mine also have looseness at this point; but both economy in construction and considerations of effectiveness in operation have shown me that it is materially better to have the screw *d* threaded directly and closely through the top of dog E, so as to avoid all tilting of the dog in respect to the screw or of the screw in respect to the dog at this point. Hence I have made the connection close fitting and just as if screw and dog were in one piece, so far as tilting is concerned; but tilting of dog E is requisite to the operation of the vise, and I have provided for this in the construction of the parts whereby the dog and screw will tilt together on pivot 2, but of course with the screw free to be operated as usual. To this end I have enlarged the opening or

entry way for the screw in the head of the movable jaw C relatively, as shown at 6, in the space about the unthreaded portion of the screw, and this space is sufficient to permit
5 the up-and-down movement of the screw at this end, as the dog E may require to accomplish the locking and unlocking of jaw member B on base A. In operation and effect the comparatively slight movement of the screw
10 is not really noticeable, and such movement or tilting of the screw in no wise affects or interferes with its operation.

What I claim is—

1. In a vise, a base and a jaw member rotatably supported in said base, and a dog pivoted in said member and adapted to lock
15 the same against rotation, said dog having an adjustable inlaid piece at its heel to take the bearing when locking occurs, substantially
20 as described.

2. The base for the vise having an annular flange and the fixed and the movable members mounted thereon, and a screw to control
25 the said movable member, in combination with a dog supported to tilt in said fixed

member or engaged by the said screw, and an adjustable bearing-piece attached to the heel of said dog in position to engage said flange on the base, substantially as described.

3. The fixed and the movable jaw members
30 and the base therefor, in combination with a dog to lock said parts against rotation together on the base, and a screw to operate said movable member threaded directly
35 through the top of said dog, substantially as described.

4. The fixed and the movable jaw members and the base therefor, in combination with a tilting dog to lock said member against rotation in the base, a screw threaded in the top
40 of said dog and fitting closely therein, and the said movable member constructed to permit said screw to tilt with the said dog, substantially as described.

Witness my hand to the foregoing specification this 6th day of December, 1902. 45

JOHN R. LONG.

Witnesses:

R. B. MOSER,

H. T. FISHER.