





# UNITED STATES PATENT OFFICE.

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BENCH-VISE.

951,201.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, JAMES E. PRIEST, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Bench-Vises; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to bench vises, and consists in the construction and arrangement of parts hereinafter fully set forth and pointed out particularly in the claims.

The object of the invention is to provide a vise of the character described, wherein the arrangement is such as to enable it to be readily adjusted to the size of the article it is desired to hold, and when so adjusted by a single movement of the operating handle cause the jaws of the vise to securely clamp the article between them in a manner to firmly hold it in place, provision being made for quickly opening the jaws of the vise and for preventing injury to the jaws or the article held between them, through the application of any excessive pressure.

The above object is attained by the structure illustrated in the accompanying drawings, in which:—

Figure 1 is an elevation of my improved vise mounted in operative position, parts being broken away. Fig. 2 is an inverted plan of Fig. 1, the handle appearing in longitudinal section. Fig. 3 is a central longitudinal section through the vise. Fig. 4 is a transverse section on line 4—4 of Fig. 1.

Referring to the characters of reference, 1 designates the fixed jaw which may be of any suitable width, and from which an inwardly extending plate 2 projects adapted to be secured to the under face of the bench 3. Formed centrally of the plate 2 is a row of rack teeth extending longitudinally of the under face thereof. Depending from the under side of the plate 2 and formed integral therewith are the L-shaped guides 5 which form a slide-way that receives and supports the slidable member of the movable jaw, as hereinafter explained.

The movable jaw 6 is provided with an integral inwardly projecting slide member,

comprising the inclined side pieces 7 having the horizontal flanges 8 which engage in the slide-way formed by the L-shaped guides, and maintain the jaws and operative parts 60 of the vise in working relation. The side pieces 7 of the slidable member of the movable jaw are connected at intervals by the cross bars 9 and 10 respectively.

Projecting from the outer face of the 65 movable jaw are the parallel ears 11 through which passes the transverse bolt 12. Pivoted upon said bolt between said ears is the operative handle 13. Said handle is formed of two parts secured together and projecting 70 from the inner face of each part is an annular boss 14. Said bosses are eccentric to the pivot bolt 12, and when the parts are placed together, form an eccentric hub within the handle around said bolt, as clearly 75 shown in Fig. 2. Embracing said eccentric is a strap or ring 15 connected to the forward end of a draft-rod 16. The rear end of the rod 16 passes freely through a block 17 having teeth upon its upper edge adapted 80 to engage said rack teeth. The rod 16 passes some distance through the block 17 and carries thereon a strong coiled spring 18 which is confined between an adjusting nut 19 on the end of said rod and the end of 85 the block 17. This spring is adjusted to act only when an excessive strain upon the rod 16 might result in the breaking of one of the jaws, or injury to the piece held between them. 90

Secured at its forward end to one of the cross bars 10 is a flat spring 20, the rear end of said spring having engagement with the forward end of the block 17. The rod 16 is square so as to prevent the turning of the 95 block 17 thereon.

When the parts are in the position shown in Fig. 1, with the handle 13 projecting horizontally, the movable jaw and the slidable inwardly extending member thereof 100 are free to be moved so as to cause the jaws to be separated or brought together, as may be required. To secure a piece, as indicated at 21, between the clamping faces of the jaws, it is placed against the face of the 105 fixed jaw, and the movable jaw moved up to it, when by swinging the handle 13 downwardly, the eccentric 14 will draw upon the rod 16 and cause the spring 20 to buckle, thereby raising the inner end of said rod and causing 110 the toothed block 17 to engage the rack teeth 4, when said rod 16 will be locked to



the plate of the fixed jaw, causing a further downward movement of said handle to draw the movable jaw with pressure against the piece held between said jaws.

5 It will be observed that the draft which is exerted upon the block 17 by the rod 16, is exerted through the spring 18, whereby the danger of excessive pressure sufficient to injure the piece held between the jaws, or  
10 break the vise, is obviated. Upon raising the handle to a horizontal position, the strain upon the rod 16 is released when the spring 20 will straighten and allow the toothed block 17 to fall from engagement  
15 with the rack teeth, thereby disconnecting the jaws of the vise and permitting the movable jaw to be drawn outwardly to release the piece between the jaws. When the handle 13 is extended horizontally, the movable  
20 jaw is free to be manipulated in any manner desired, greatly facilitating the setting of the vise to receive any class of work, and enabling work to be placed in the vise and removed therefrom in the shortest possible  
25 time, while the construction of the vise is such that any desired pressure may be acquired without liability of injury to the parts. Upon the eccentric handle or lever 13 is a stop lug 22 to limit the movement of  
35 said lever.

Having thus fully set forth my invention, what I claim as new and desire to secure by Letters Patent, is:—

35 1. In a vise, the combination of a stationary jaw having a longitudinally extending

rack, a movable jaw slidably associated with the stationary jaw carrying a draft-rod, and through which said rod is longitudinally movable, said block being a toothed block loosely mounted on said rod adapted to en- 40 gage said rack but normally free therefrom, a coiled spring confined between said block and the rear end of said rod, a flat spring fixed to a part of the movable jaw and fixedly engaging the forward end of said block, 45 and an eccentric lever pivoted to the movable jaw and engaging the forward end of said rod.

2. In a vise, the combination of a fixed jaw having a rearwardly extending plate, a 50 rack formed on the under side of said plate, a movable jaw having a rearwardly extending part slidably mounted on the plate of the fixed jaw, an eccentric lever pivoted to the outer face of the movable jaw, a draft- 55 rod having connection at its forward end with the eccentric of said lever, a toothed block slidably mounted on said rod near its rear end adapted to engage said rack, a coiled spring upon the rear end of said rod 60 engaging said block, and a flat spring fixed at its forward end to a part of the movable jaw and at its rear end engaging said block.

In testimony whereof, I sign this specification in the presence of two witnesses.

JAMES E. PRIEST.

Witnesses:

CHAS. E. KEW,  
ALFRED N. TAGERT.