B. STARR.

VISE.

APPLICATION FILED AUG. 25, 1914.

1,180,451. Patented Apr. 25, 1916.

Fig. 1.

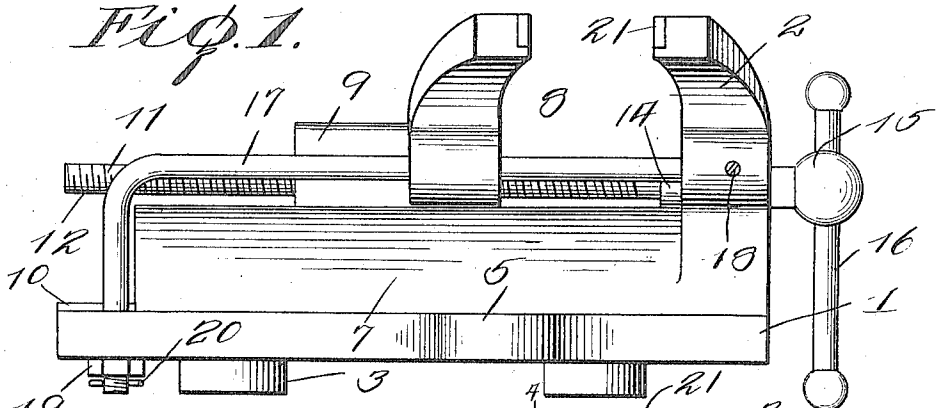


Fig. 2.

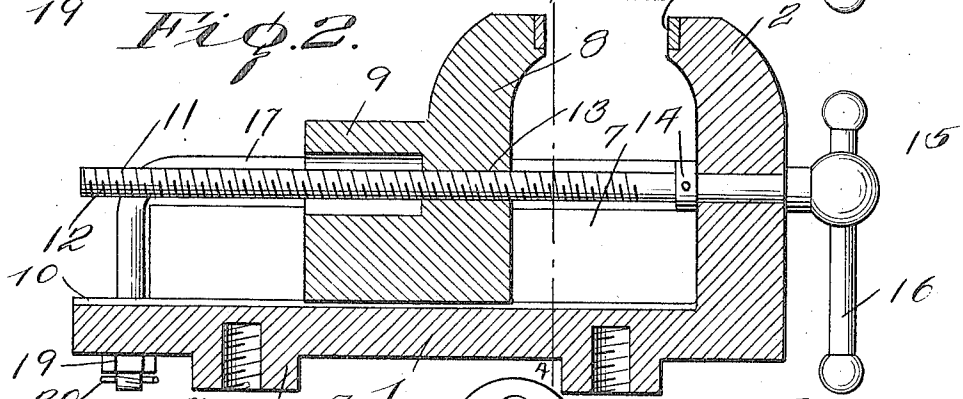


Fig. 3.

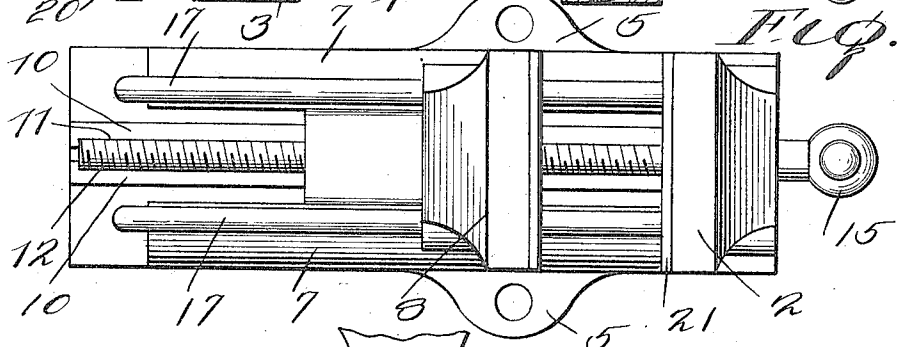
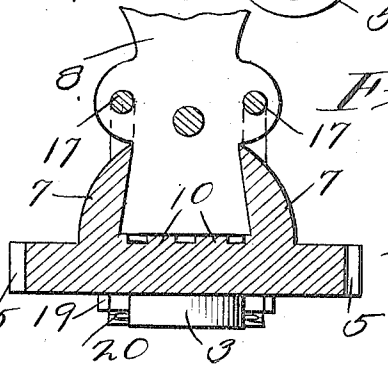


Fig. 4.



Witnesses

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VISE.

1,180,451. Specification of Letters Patent. Patented Apr. 25, 1916.

Application filed August 25, 1914. Serial No. 858,466.

To all whom it may concern:

Be it known that I, BERT STARR, a citizen of the United States, residing at Union Grove, in the county of Racine, State of Wisconsin, have invented certain new and useful Improvements in Vises; and I do hereby 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.

This invention relates to a vise.

An object of the invention is to provide a device of this character, the clamping jaws of which are provided with detachable gripping members so that the said members may be changed to accommodate various characters of work.

A further object of the invention is to so mount the movable jaw on the face of the device that it will be readily movable thereon, yet will be positively guided in said movement.

With these and other objects in view, such as will appear as the description progresses, my invention comprises the combination and arrangement of parts as herein set forth and subsequently claimed.

Referring to the drawing: Figure 1, side elevation of my device. Fig. 2 is a longitudinal sectional view. Fig. 3 is a plan view thereof. Fig. 4 a section on line 4—4 of Fig 2.

Referring to the drawing wherein like parts are indicated by like characters throughout the several views:—My device comprises a base 1 on one end of which is formed an upwardly extending jaw 2, the said jaw being integral with the aforementioned base.

In order that the device may be effectively secured to a bench, I have provided on the under face of the said base 1 a plurality of spaced bosses 3 which are internally threaded and accommodate thumb screws, the latter passing through the bench to which the device is attached. In order that the base may be prevented from having any rocking motion on the sides thereof are outwardly extending ears 5 through which threaded holes are formed. Bolts are passed through the said threaded holes and through the bench.

Formed on the longitudinal edges of the base 1 are guide rails 7 which are integral with the stationary jaw 2 and at the other end of the said base terminate in spaced relation to the said end. A slidable jaw 8 is mounted between the guide members 7 and has on the rear end thereof a boxing 9 which is constructed and arranged to house the rear portion of the operating screw. This jaw and housing slide between the guides 7 on tracks 10 which are formed integral with the base 1 and are ground so as to present a smooth sliding surface, as is also the inner face of each of the guides 7.

In order that the jaw 8 may be moved back and forth with relation to the stationary jaw 2, I have provided an operating screw 11 on one end of which is formed a helical thread 12 which coöperates with an internally threaded hole 13 in the movable jaw to move the said jaw upon the rotation of the said screw 11. This screw 11 passes through the stationary jaw 2 and this portion of the screw is of cylindrical formation without the thread 12 thereon. Secured to the said screw 11 is a collar 14 which bears against the inner face of the stationary jaw 2 to prevent movement of the said screw 11 through the said stationary jaw in one direction.

On the outer end of this screw 11 is formed an enlargement 15, through which extends an operating handle 16, the said handle being slidable therethrough and prevented from disengagement therefrom by knobs on the ends thereof. This enlargement on the end of the screw 11 prevents the movement of the screw in the other direction with relation to the stationary jaw 2.

In order that the movable jaw may be materially strengthened during its operation so as to be prevented from having any tendency to transverse movement, I have provided guides 17. These guides 17 extend parallel to each other and above the guides 7; they extend through the movable jaw 8 and at one end are secured to the stationary jaw 2 by screws 18 and at the other end are bent downwardly adjacent to the end of the guides 7 and pass through the base 1. The lower ends of these guides 17 are threaded and on these threaded ends are secured nuts 19 which are prevented from displacement by cotter pins 20. By providing these guide members 17 which pass through the movable jaws it may be readily seen that the said jaws will be prevented from having any transverse movement and furthermore by threading the lower ends of

the said guides 17 the ease with which the movable jaw is moved upon the base 1 may be varied by loosening or tightening the nuts on the lower ends thereof.

On the inner faces of the movable jaw, and the stationary jaw 2, I have provided detachable gripping members 21 which are secured to said inner faces by set screws. This provision of removable gripping members is advantageous inasmuch as the said gripping members may be readily changed to accommodate work of a different character.

The guide rods 17 assist the guide rails 7 in guiding the movable jaw 8 and it has been found that this particular arrangement is very advantageous especially where heavy work is being operated upon. The guide rods 17 will not only take part of the strain off of the guides 7 but will also effectively prevent any lateral movement of the movable jaw. If these rods 17 were not present, there would be, to a certain extent, lateral movement of the movable jaw because of the space between the base of this movable jaw and the guide rails 7. This space must necessarily be present for otherwise it would be impossible to adjust the movable jaw. Furthermore the downwardly turned ends of the rods 17 limit the movement of the movable jaw away from the stationary jaw and thus prevent the entire displacement of the movable jaw from the guide rails.

From the foregoing description it may be readily seen that I have provided a vise which has a movable jaw and a stationary jaw and I have so constructed the device that the ease with which the movable jaw may be moved may be readily varied by increasing the friction between the said jaw and the tracks on which it is mounted.

I have further so constructed the device that all tendency to transverse movement of the said movable jaw may be obviated.

While I have illustrated and described a particular embodiment of my invention, I wish it to be understood that I do not wish to be limited to that particular embodiment for it is obvious that numerous changes may be made within the scope of the invention as defined by the claims.

What is claimed is:—

1. In a vise, a base, a stationary jaw formed on one end of said base, longitudinally extending guides formed on the edges of said base and extending upwardly therefrom, a movable jaw slidable between the guides, parallel guide rods secured to said stationary jaw and extending parallel and above the first mentioned guides, the other end of the said guide rods extending through the base and adjustably secured thereto, the said guide rods also extending through the base and adjustably secured thereto, the said guided rods also extending through the movable jaw, a screw revolubly supported in said stationary jaw and having threads thereon engaging the threads on the movable jaw and means for operating the said screws to move said movable jaw.

2. In a vise, a base, a stationary jaw formed on one end thereof, a movable jaw slidably mounted on the base, guides secured to the edges of said base between which said movable jaw slides, guide rods secured to the said stationary jaw and extending through said movable jaw and thence downwardly through the base, nuts mounted on the lower ends of said guide rods and adapted to control the movement of the said movable jaw, and means secured to said stationary jaw to vary the relative position of the same.

3. In a vise, a base, a stationary jaw formed at one end of the base, longitudinally extending guide rails formed on the edges of the base and open at the ends remote from the stationary jaw, a movable jaw slidable between the guide rails, and means engageable with the movable jaw to assist the rails in guiding the same and to also prevent the displacement of the jaw from between the rails.

In testimony whereof I affix my signature, in the presence of two witnesses.

BERT STARR.

Witnesses:
J. H. MARTIN,
IRVING WILKE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."