

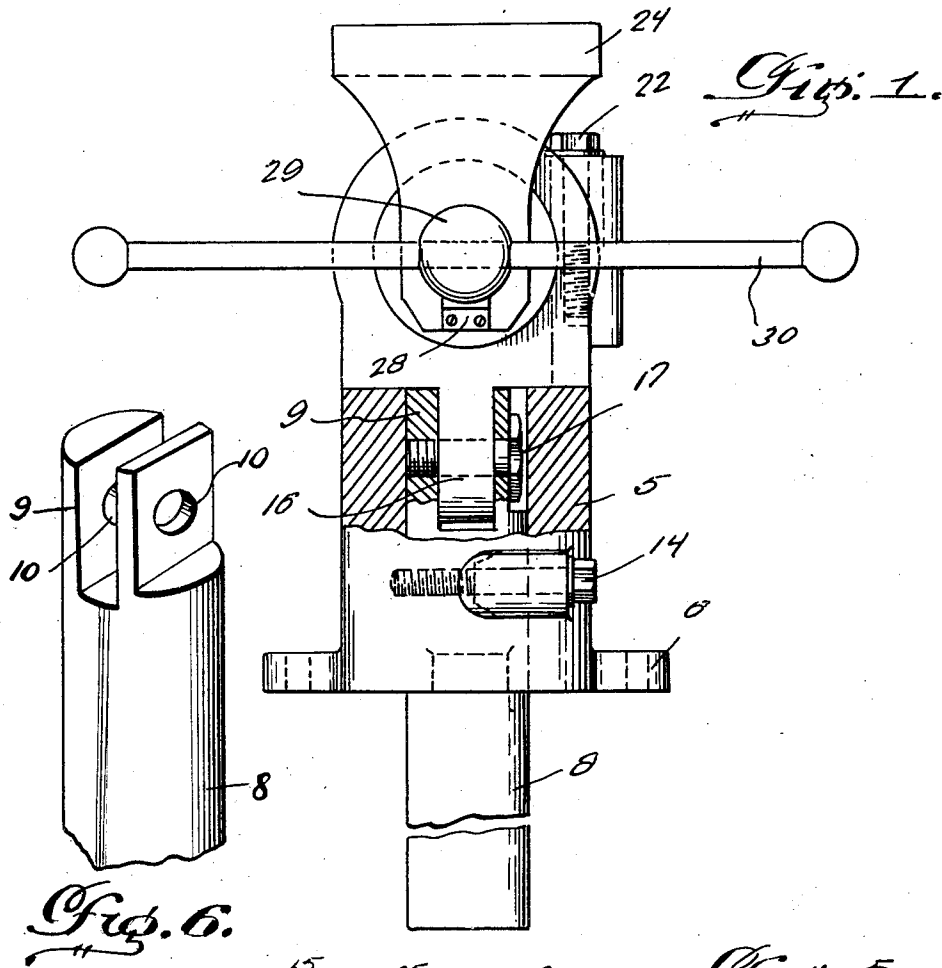
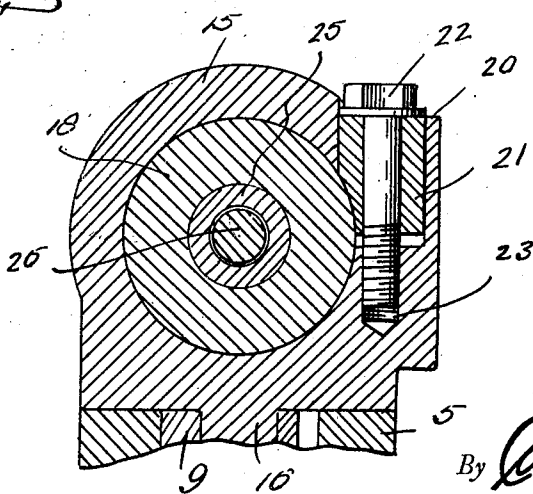
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Z. A. BLANCHARD
VISE AND MOUNT THEREFOR

Filed May 19, 1927

2 Sheets-Sheet 1



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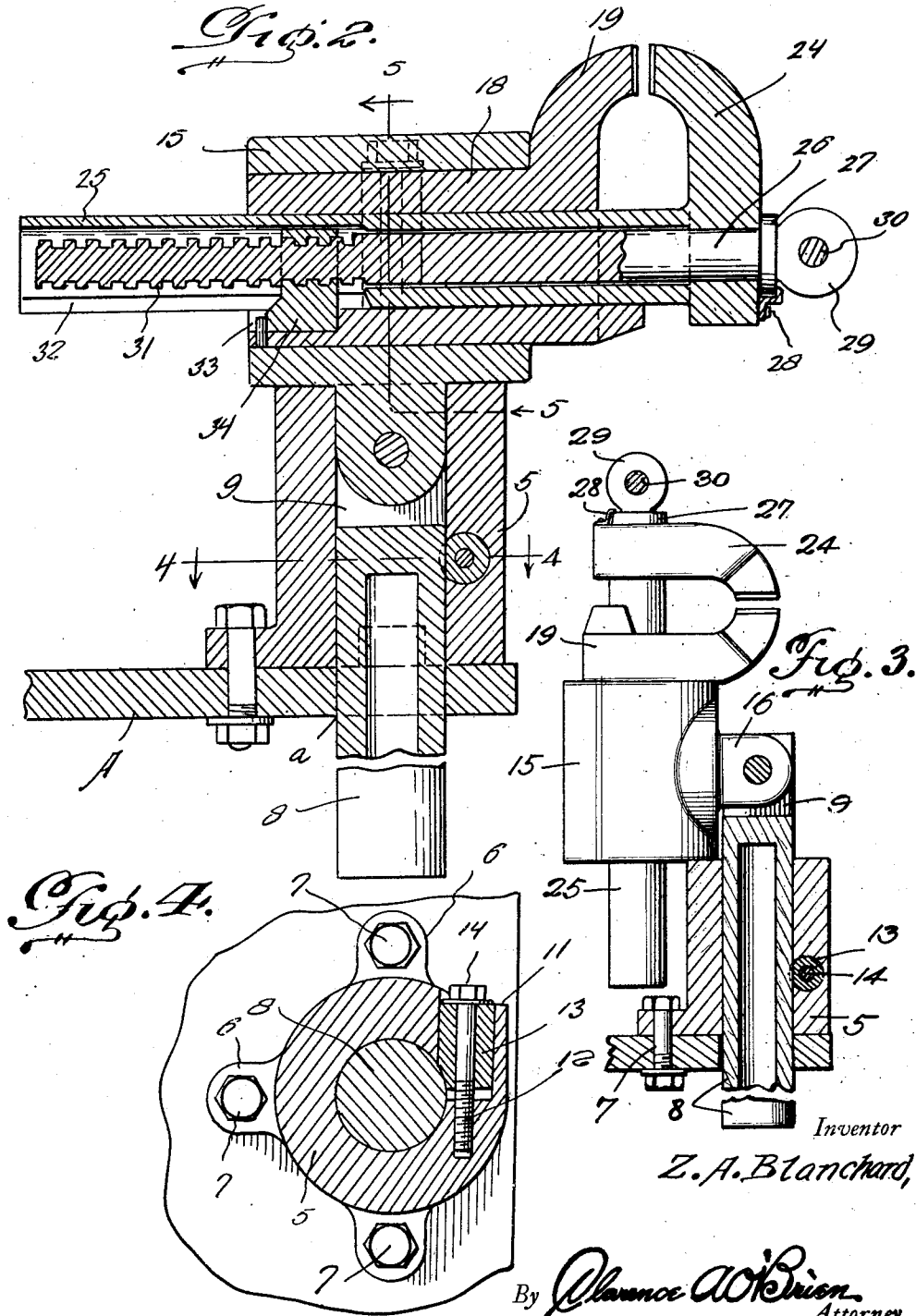
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE.

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VISE AND MOUNT THEREFOR.

Application filed May 19, 1927. Serial No. 192,690.

This invention relates to new and useful improvements in vises and aims to provide a highly novel, simple and efficiently operating vise together with a particular construction of a mounting means so as to facilitate the rigid anchoring of the vise in any desired position with respect to the work table or other support.

In carrying out my invention there is provided means between a generally conventional vise construction and an attaching unit that will enable the vise to be easily and quickly swung from a horizontal to a vertical position and wherein the vise may be arranged at any desired point within a circle while in either the vertical or horizontal position. Furthermore such means will negate any liability of the movement of the vise after the same has been properly anchored in the desired position.

In the drawings wherein like numerals indicate like parts throughout the several views:

Figure 1 is a view partially in front end elevation and vertical cross section of the vise and mount when the device is arranged in horizontal position.

Figure 2 is a detail section through the vise and mount, the mount being supported in horizontal position.

Figure 3 is a section through the mounting mechanism and disclosing the vise structure in side elevation and rigidly anchored to a work table or bench in vertical position.

Figure 4 is a horizontal section taken substantially on the line 4—4 of Figure 2 and looking downwardly in the direction of the arrows for more clearly disclosing the connecting means between the base of the mount structure and the vertically adjustable pin slidable therethrough and to the upper end of which is pivotally attached the vise structure.

Figure 5 is a vertical horizontal section taken substantially upon the broken line 5—5 of said Figure 2 for more clearly disclosing the locking means between the bushing of one of the vise jaws and the cylindrical bushing holder, and

Figure 6 is a perspective of the upper end of said vertically adjustable post to which upper end is pivotally attached the vise structure.

Now having particular reference to the drawings, A designates the top board of a work bench or table formed at its outer edge

with a circular opening *a*. Arranged upon this bench or table directly over the opening *a* is a base unit 5 of hollow cylindrical form having lateral ears 6 at its lower end through which are openings for facilitating the anchoring of the base unit to the bench or table by bolts or other fastening means 7. The interior of this cylindrical or base unit 5 registers with the opening *a* in the bench or table and mounted for loose vertical sliding movement and rotation therein is a hollow cylindrical vise attaching post 8, the upper end of which is solid and provided with a vertical bifurcation 9, the branches of which are formed with registering openings 10—10. As more clearly disclosed in Figure 6 the outer surface of one branch of said bifurcation 9 is of plano formation so as to be spaced inwardly from the surface of the post to provide a space for a nut within the post surface as hereinafter more fully described.

For facilitating the rigid securing of the post 8 within the cylindrical base unit 5 after the same has been raised or lowered and turned to a predetermined point said base unit 5 is formed with a tangential circular socket 11 that opens at the face of the unit as clearly indicated at Figure 4, the end wall of said socket being formed with a threaded socket 12, while the inner end of said socket 11 communicates with the interior of the cylindrical base unit 5 also as clearly disclosed in Figure 4. For removable disposition within this socket 11 is a clamping sleeve 13 formed longitudinally with a bore within which is mounted an elongated screw 14, the inner threaded end of which is adapted for threaded engagement within the threaded socket 12 for wedging the inner end of the sleeve 13 against the post 8, said sleeve at the point of engagement with the post being slightly rounded to conform with the curvature of said post.

The vise structure per se consists of an open ended cylindrical bushing holder 15 formed at its surface and intermediate its ends with an outwardly projecting tongue 16, the end surface thereof being rounded as clearly indicated in Figures 2 and 3. This tongue is arranged within the bifurcated end 9 of the post 8 and is pivoted to the branches thereof by bolt 17 passing through the openings 10—10 in the bifurcation branches and within an opening in said tongue. This bolt 17 is of the headed and

threaded character and is arranged through the end of the post 8 in such a manner that the head thereof will engage the branch of bifurcation having the plane surface so that said head will be entirely within the confines of the post to permit the upper end of the same to be moved downwardly into the base unit 5 together with said holder tongue 16. Furthermore, the threaded end of the bolt is threaded within the opening in the other branch of the post bifurcation which is of course internally threaded. By reason of this connection between the cylindrical bushing holder 15 and the post 8 said bushing holder may be arranged horizontally with respect to the base unit 5, resting upon the upper end thereof and there maintained by reason of a locking means between the base unit and said post.

By releasing the locking means, the post may be raised after which the bushing holder 15 may be swung over at right angles to the position indicated in Figure 3 and rested vertically upon the upper end of the base unit and there maintained by forcing the post 8 downwardly within the base unit 5 to the limit of its movement and then locking said post to the base unit. Furthermore by reason of the connection between the base unit and post, said post may be rotated to any desired point within the unit so as to position the vise structure at any desired point within a horizontal or vertical circle.

Mounted for longitudinal sliding movement and turning movement within the cylindrical bushing holder 15 is a bushing 18 formed at its outer end and at one side of the bore extending therethrough with a conventional vise jaw 19. For maintaining the jaw bushing 18 at a predetermined adjusted position within the cylindrical bushing holder 15 said bushing holder 15 is formed at its surface with a tangentially extending socket 20 that opens at the surface of said bushing, see Figure 5. For arrangement within this socket 20 is a locking sleeve 21 having a bore therethrough for receiving a headed and threaded bolt 22, the inner threaded end of which is adapted for threaded engagement within a threaded socket 23 at the inner end of the sleeve socket 20. Obviously by turning this bolt in one direction said sleeve 20 will be forced into engagement with the bushing 18 for preventing movement of the same within the holder 15. Furthermore the point of engagement of the sleeve with the bushing 18 is rounded to conform to the exterior configuration of said bushing, again see Figure 5.

The vise structure further consists of a jaw 24 complementary to the jaw 19 and upon the inner face of which is formed a horizontal elongated hollow bar 25, the interior of which registers with an opening at the lower end of the jaw 24 as clearly indicated in Fig-

ure 2. Mounted within this hollow bar 25 and through the opening in the jaw 24 is an elongated solid bar 26, the outer end of which projects through the jaw 24 and is formed directly adjacent the jaw with a circular flange 27 complementary to which is a stop finger 28 attached to the jaw to prevent the outward movement of the bar through said jaw and within said hollow bar 25. The extreme outer end of this bar 25 is provided with a head 29 through which is arranged the usual operating cross handle 30.

The inner end of the bar 26 is formed with a worm 31 while beneath this wormed area of said bar the hollow bar 25 is longitudinally slotted as at 32. Securely arranged within a slot 33 formed within the bore of the jaw bushing 18 and at the end opposite the jaw 19 is a worm nut 34 through which the wormed area of the bar 26 is threaded, see Figure 2, obviously a rotation of the handle 30 will cause the rotation of the jaw actuating bar 26 to cause the inward or outward movement of the jaw 24 with respect to the stationary jaw 19.

It will thus be seen that I have provided a highly novel, simple, and efficiently operating vise and mounting structure therefor that is well adapted for all the purposes heretofore designated, even though I have herein shown and described the invention as consisting of certain detail structural elements it is nevertheless to be understood that some departures may be had therefrom without affecting the spirit and scope of the appended claims.

Having thus described the invention, what I claim as new is:—

1. In combination with a vise including a stationary and a movable jaw, said stationary jaw being formed with a bushing and arranged within a bushing holder, said bushing holder being provided intermediate its ends with a lateral tongue, a hollow base member, a post movable freely within the base, a pivotal connection between one end of the post and the tongue of said bushing holder, said connection permitting the engagement of the tongue within the holder, said hollow base member being formed with a tangential opening communicating with the bore thereof, a member movable within said opening for engagement with the post for fixing or securing the same at a predetermined position within the base, and a threaded member projecting through said member and threadable into the base for moving said member into engagement with the post.

2. In combination with a vise including a stationary and a movable jaw, said stationary jaw being formed with a bushing and arranged within a bushing holder, a tongue projecting laterally from the side of said bushing holder, a tubular base member, a cylindrical post vertically slidable within said base

member, a pivotal connection between one end of the post and the tongue of said bushing holder, said hollow base member being formed with a tangential opening communicating with the bore thereof, a member movable within said opening for engagement with the post for fixing or securing the same at a predetermined position within the base, and a threaded member projecting through said member and threadable into the base for moving said member into engagement with the post.

3. In combination with a vise including a stationary and a movable jaw, said stationary being provided with a bushing and arranged within a bushing holder, a tongue projecting laterally from said bushing holder,

a tubular base member, a cylindrical post vertically slidable within said base member, a pivotal connection between one end of the post and the tongue of said bushing holder, said hollow base member being formed with a tangential opening communicating with the bore thereof, a member slidable within the opening, the inner end of said opening member being arcuately cut for conformation with the side of the cylindrical post when the same is engaged therewith, and a threaded member threadable through said member and threadable into the base for moving said member into binding relation with the post. 20 25 30

In testimony whereof I affix my signature.

ZEPHIR A. BLANCHARD.