U. G. BOND.

ARMED VISE.

APPLICATION FILED MAR. 24, 1916.

1,192,267. Patented July 25, 1916.

Fig. 1.

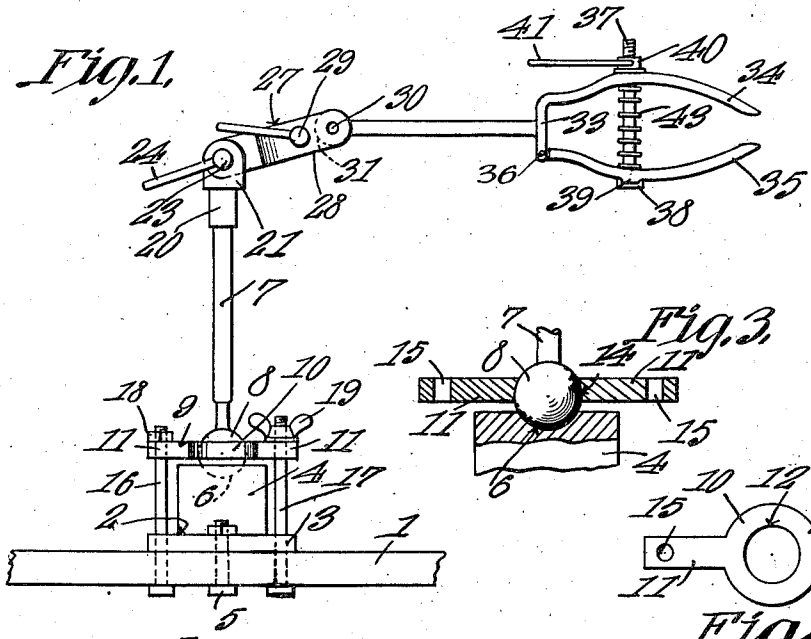


Fig. 3.

Fig. 4.

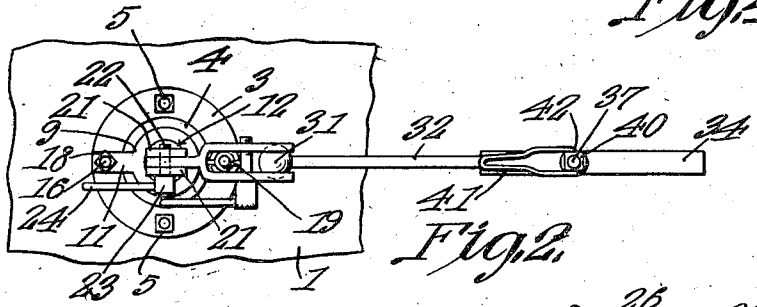


Fig. 2.

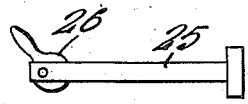


Fig. 6.

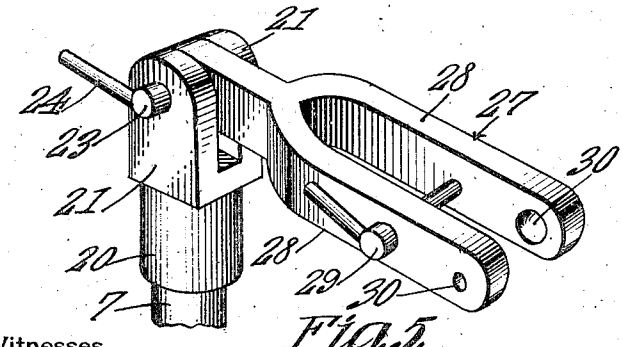


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

ULYSSES GRANT BOND, OF MUSCATINE, IOWA, ASSIGNOR OF ONE-HALF TO JOHN M. O'BRIAN, OF MUSCATINE, IOWA.

ARMED VISE.

1,192,267. Specification of Letters Patent. Patented July 25, 1916.

Application filed March 24, 1916. Serial No. 86,484.

To all whom it may concern:

Be it known that I, ULYSSES GRANT BOND, a citizen of the United States, residing at Muscatine, in the county of Muscatine and State of Iowa, have invented a new and useful Armed Vise, of which the following is a specification.

The device forming the subject matter of this application is adapted to hold one of two parts which are to be welded, soldered or otherwise connected, the other of said parts being held in a common bench vise or the like, the structure forming the subject matter of this application being secured to a bench in close relation to the vise above mentioned.

It is the object of the present invention to provide a work support embodying a grip adapted to hold one of two parts to be welded or soldered, a novel construction being provided whereby a universal movement may be given to the grip.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawing:—Figure 1 shows in side elevation, a vise constructed in accordance with the present invention; Fig. 2 is a top plan of the vise as shown in Fig. 1; Fig. 3 is a sectional detail showing the means whereby the staff is adjustably held to the base; Fig. 4 is a plan of the yoke shown in Fig. 3; Fig. 5 is a fragmental perspective between the shaft and the arm which swings with respect to the shaft; and Fig. 6 is an elevation showing a modified detail of the invention.

In the accompanying drawings, the numeral 1 indicates a support of any desired sort, which may be a work bench. Mounted on the support 1 is a base denoted generally by the numeral 2, the base 2 including a foot plate 3 and a pedestal 4 upstanding from the foot plate. Bolts 5 or other securing elements adapted to a like end pass through the foot plate 3 of the base and connect the base with the support 1. In the upper end of the pedestal 4 there is formed a concaved seat 6.

The numeral 7 indicates a staff provided at its lower end with a ball 8 mounted to rock in the seat 6.

The numeral 9 designates a yoke including a central head 10 and arms 11 projecting in opposite directions from the head. In the head 10 there is formed an opening 12, the edge of which is shaped as shown at 14 to coöperate with the ball 8. In the ends of the arms 11 of the yoke 9 are formed holes 15 through which pass standards 16—17. The standards 16 and 17 may be in the form of bolts, passing downwardly through the foot plate 3 and through the bench or support 1, the heads of the bolts engaging the under side of the bench. The standards 16 and 17 pass upwardly through the openings 15 in the yoke 9. A nut 18 is threaded onto the upper end of the standard 16 and coacts with one end of the yoke 9, there being a wing nut 19 threaded onto the standard 17, the wing nut coöperating with the other end of the yoke. The standard 16 preferably fits somewhat loosely within the corresponding opening of the yoke, so that the wing nut 19 may be tightened down, the yoke 9 coöperating with the ball 8 to clamp the same in the seat 6 of the pedestal 4. From the foregoing it will be obvious that the staff 7 may be given a free swinging movement, the yoke 9 and the wing nut 19 constituting a means whereby the staff 7 may be held at any angle to which it may have been tilted. The staff 7 at its upper end terminates in a head 20 having spaced ears 21.

The numeral 22 indicates a pivot element, threaded at its end into one of the ears 21 and rotatable in the other of the said ears, the pivot element 22 having a head 23 bearing against the last specified ear. The head 23 of the pivot element 22 may be provided with an outstanding handle 24. Mounted to swing on the pivot element 22 and located between the ears 21 is an arm 27. The arm 27 may be swung on the pivot element 22 and by rotating the pivot element, the ears 21 may be made to clamp across the arm, thereby to hold the arm in adjusted positions. At its outer end, the arm 27 termi-

nates in spaced fingers 28 connected by a clamp screw 29 resembling in general construction, the pivot element 23—24. In the arms 28 are formed recesses 30 adapted to receive a ball 31 formed at the inner end of an extension bar 32. The construction is such that the bar 32 may assume various angles with respect to the arm 27, the ball 31 rocking in the seats or recesses 30. By tightening up the clamp screw 29, the arms 28 may be made to grip the ball 31, thus holding the extension bar 32 in adjusted positions.

Secured to the outer end of the extension bar 32 is a cross piece 33 provided with a fixed jaw 34. Coöperating with the fixed jaw 34 is a movable jaw 35, the jaws 34 and 35 constituting a grip whereby the work may be held. The movable jaw 35 is pivoted to the cross piece 33 as shown at 36.

The numeral 37 indicates a clamp bolt passing through the jaws 35 and 34, the clamp bolt 37 being provided with a head 38 coöperating with the outer face of the movable jaw 35. On the movable jaw 35 is formed a lug 39 which, coacting with the head 38 of the clamp bolt 37, prevents the clamp bolt from turning. Threaded onto the clamp bolt 37 is a nut 40 provided with a laterally projecting handle 41 which may be pivoted to the nut, as shown at 42, so that the handle may be swung into an accessible position or into an out-of-the-way position. Interposed between the jaws 34 and 35 and constituting a means for separating the same is a compression spring 43 surrounding the bolt 37.

It will be understood readily that the staff 7 may be swung about with respect to the pedestal 4, and be held in adjusted positions with respect thereto. Further, the arm 27 may be moved pivotally with respect to the staff 7 and be held in adjusted positions. Similarly, the extension bar 32 may be moved or swung about with respect to the arm 27 and be held in adjusted positions. The work may be gripped between the jaws 34 and 35 in a manner which will be obvious. The entire construction therefore is such that the grip, represented by the jaws 34 and 35 may be given practically a universal movement so that a piece of material held therein may be disposed properly with respect to another piece of material, held by a bench vise, (not shown) the two pieces of material being welded, soldered, or otherwise secured together.

Any suitable clamping means may be provided at points where a clamping means is needed, and may be used in place of the pivot screws 22—23—23, in place of the clamp screw 29 which connects the fingers 28 of arm 27, and in place of the clamp bolt 37 which connects the jaws 34 and 35 of the grip. There may be employed such a structure as that indicated at 25 in Fig. 6, and carrying a cam 26, it being essential, merely, that some suitable clamping means are provided.

Having thus described the invention, what is claimed is:—

1. In a device of the class described, a base; a staff upstanding from the base; a ball and socket mechanism operatively uniting the staff with the base; means for holding the constituent parts of the ball and socket mechanism against relative movement; an arm pivoted to the staff; means for preventing relative swinging movement between the staff and the arm; an extension; a work holding grip at the outer end of the extension; a ball and socket mechanism connecting the inner end of the extension to the outer end of the arm; and means for preventing relative movement between the constituent parts of the last specified ball and socket mechanism.

2. In a device of the class described, a base comprising a foot plate and a pedestal upstanding from the base, the pedestal being provided in its top with a socket; a staff having a ball received within the socket; a yoke including a seat coacting with the ball to hold the ball to the socket; standards upstanding from the foot plate and engaged with the ends of the yoke; a clamping means on one standard and coacting with the yoke; a work holder; and means for connecting the holder with the staff.

3. In a device of the class described, a staff provided at its upper end with ears; an arm received between the ears; a combined clamping and pivot means uniting the arm with the ears; an extension; a work grip carried by one end of the extension; a base; a ball and socket connection between the other end of the extension and the arm; and a ball and socket connection between the lower end of the staff and the base.

4. In a device of the class described, an arm having spaced ears; an extension embodying a ball received between the ears; means uniting the ears for causing the ears to clamp the ball; a work holder carried by the extension; a staff to which the arm is pivoted; means for holding the staff and the arm against relative movement; a base; and a ball and socket connection between the staff and the base.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ULYSSES GRANT BOND.

Witnesses:
F. E. McMains,
W. E. Bond.