E. B. WERNER.

PIPE VISE AND DIE CARRIER.

APPLICATION FILED SEPT. 9, 1907.

920,797.

Patented May 4, 1909.

2 SHEETS—SHEET 1.

Fig. 1

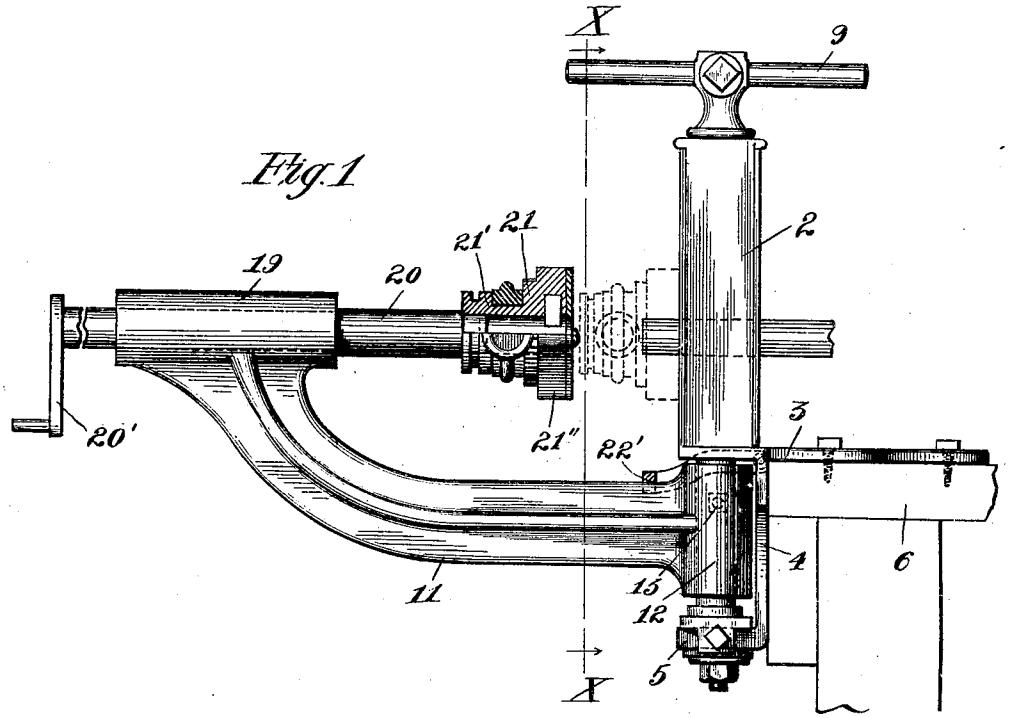
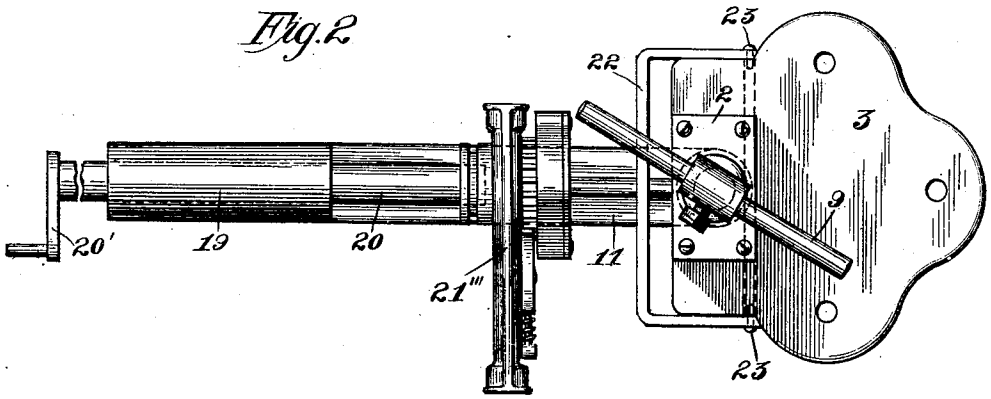


Fig. 2



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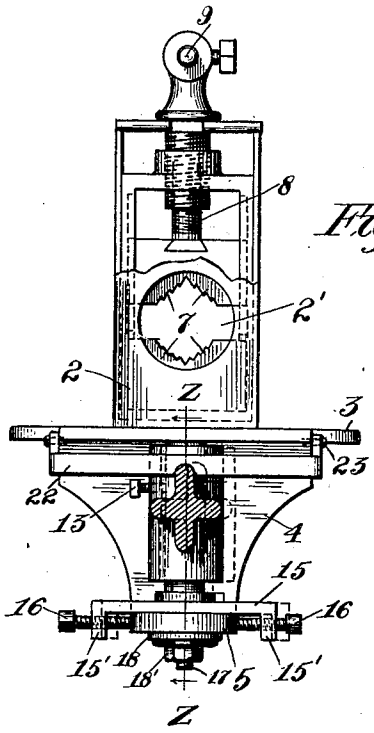


Fig. 3

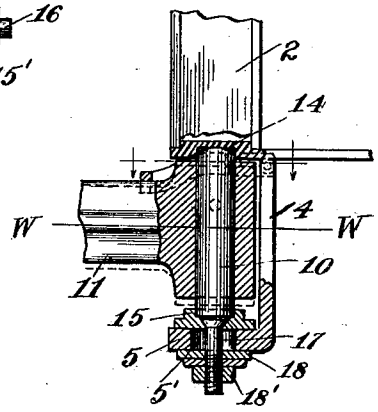


Fig. 4

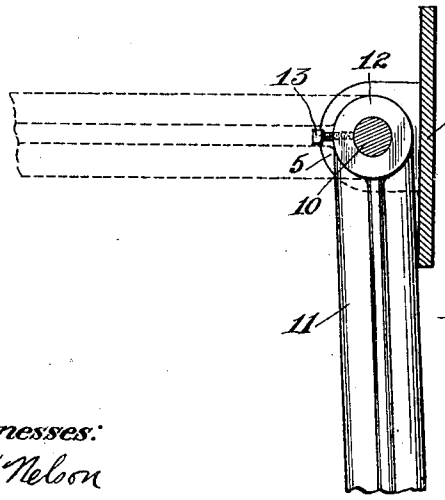


Fig. 5

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EZRA B. WERNER, OF HOOPESTON, ILLINOIS.

PIPE-VISE AND DIE-CARRIER.

No. 920,797. Specification of Letters Patent. Patented May 4, 1909.

Application filed September 9, 1907. Serial No. 391,907.

To all whom it may concern:

Be it known that I, EZRA B. WERNER, a citizen of the United States, and a resident of Hoopeston, Vermilion county, Illinois, have invented certain new and useful Improvements in Pipe-Vises and Die-Carriers, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in means for cutting and threading pipes and bars and the object of my invention is to provide a bench tool which shall facilitate such work.

With this object in view, my invention consists generally in a vise, for attachment to a bench or other support, in combination with a swinging die carrier so supported that it may be accurately alined with the pipe or other article in the vise, said carrier, when so positioned, being adapted to hold a threading or cutting die in working position, and in the other position adapted to support the die at one side of the vise, thus leaving the front of the vise free, as required for the convenient handling or repositioning of the pipe therein.

The invention will be more readily understood by reference to the accompanying drawings, forming a part of this specification, and in which:

Figure 1 is a side view of a pipe vise and die carrier embodying my invention; Fig. 2 is a plan view thereof; Fig. 3 is a transverse vertical section on the line X—X of Fig. 1, viewed in the direction of the arrows; Fig. 4 is a vertical sectional detail of the line Z—Z of Fig. 3, viewed in the direction of the arrows; and Fig. 5 is a horizontal section on the line W—W of Fig. 4, showing the swinging arm of the die carrier in position, at one side of the vise.

As shown in the drawings, 2, represents the body of the vise. This is mounted upon an integral base plate, 3. A depending portion or face plate, 4, also integral with the plate, 3, extends downwardly therefrom and at its lower end is provided with a horizontal flange, 5. The plates, 3 and 4, with suitable lug screws, serve as means for attaching the device to the bench, 6. It will be noted that the body of the vise stands forward of the edge of the bench, the rear side thereof being substantially in the same vertical plane with the plate, 4. The member, 2, contains suitable blocks or jaws, 7, both vertically adjustable by means of the compound screw, 8. The construction is such that the jaws or blocks move equal distances when adjusted, so that a pipe which is held therein is always substantially concentric with the holes, 2′, of the front and back of the vise body, 2. The head of the screw is provided with a removable hand rod, 9, by which it may be turned. Between the bottom of the vise and the flange or lug, 5, I arrange a short shaft, 10, and to this attach the die carrier arm, 11. The end of the arm is provided with a vertical sleeve, 12, which fits the shaft, 10, and is vertically adjustable thereon, being secured thereto by a set screw, 13. The upper end of the shaft, 10, fits in a socket, 14, in the overhanging bottom of the vise, and the lower end is held by the adjustable step or plate, 15. The latter rests on the flange, 5, and is provided with down turned ends, 15′, containing set screws, 16. These set screws work against the sides of the flange or lug, 5, and by alternately adjusting the set screws, the step plate, 15, may be moved to one side or the other. The plate is laterally adjustable in all directions, the purpose of such adjustability being to enable the accurate positioning of the arm, 11, as required to properly aline the die with the pipe in the vise, as better explained hereinafter. The set screws, 16—16, might be depended upon to hold the step in desired position, but I prefer to employ still other fastenings, as best shown in Figs. 3 and 4. As there shown, the lug, 5, contains a large opening, 5′. A short bolt, 17, is attached to the member, 15, and extends downward through the large hole. The bolt is fastened by means of a large washer, 18, and a nut, 18′. When the bolt, 17, is tightened, the plate, 15, cannot move on the lug, 5, and therefore securely holds the lower end of the shaft, 10.

It should be understood that this adjustable step is of greatest use in the assembling of the parts of the device and that after these parts have been once put together, it is rarely necessary to change the adjustment of the step plate.

The upper and outer end of the arm, 11, contains a long horizontal sleeve or bearing, 19, that is alined with the vise by manipulation of the adjustable step plate or bearing, 15. In the bearing, 19, is a shaft or spindle, 20, which constitutes the die carrier proper. The shaft is freely slidable in the bearing, 19, and may also be rotated therein by means of

the crank, 20'. 21 represents a die stock comprising the sleeve, 21', having a socket to receive the end of the shaft, 20. The die head or stock proper, 21'', is attached to the sleeve and as usual is provided with a ratchet for engagement with the pawl of the lever, 21''', the latter being journaled on the sleeve, 21. It will be noted that unlike other die stocks, this device presents the dies directly to the end of the pipe in the vise and may be worked close up to the face of the vise, as indicated by dotted lines in Fig. 1. I am able to use the die stock in this manner for the reason that the stock is held in alinement with the end of the pipe by the shaft, 20, an office usually performed by the sleeve of the stock. In cutting a thread the stock is operated by means of a lever and at the same time pressure is exerted on the end of the shaft, 20, to force the die to its work. 22, represents a locking bail pivoted upon the vise at points, 23. At the middle the bail contains a notch, 22', to receive the arm, 11, when in its opened or mid position. The bail therefore relieves the operator from the necessity of holding the arm in proper position with respect to the vise. By raising the bail the arm is unlocked and may then be swung to one side, as indicated in Fig. 5. It is not necessary to detach the die stock from the arm at this time and the swinging back of the arm removes the stock from the front of the vise and makes room for a cutting tool and permits the operator to freely handle the pipe or rod, as may be required.

As various modifications of my invention will readily suggest themselves to one skilled in the art, I do not confine the invention to the specific structure herein shown and described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A vise for attachment to a bench or like support in combination with an arm, a vertical pivot therefor beneath said vise, and a horizontal die carrier at the outer end of said arm, said arm being adapted to be swung into alinement with said vise and also adapted to swing to either side of said vise, substantially as described.

2. A vise for attachment to a bench or other support and provided with a depending arm or lug, in combination with a pivot shaft arranged vertically between said lug and the bottom of the vise, an arm adjustable on said pivot shaft and having means for supporting a cutting die, substantially as described.

3. A pipe vise, in combination with a laterally adjustable vertical pivot arranged beneath the same, an arm held by said pivot to swing to either side of said vise, the outer end of said arm rising to the level of the jaws of the vise and being provided with means for supporting a cutting die, as and for the purpose specified.

4. A pipe vise adapted for attachment to a bench or like support, in combination with an arm vertically pivoted to the under side of said vise, a die-carrier provided in the outer or free end of said arm and a bail for securing the arm in alinement with said vise, substantially as described.

5. A pipe vise having a depending arm, in combination with a step plate laterally adjustable upon said arm, a shaft arranged between said step and the body of the vise, an arm held by said shaft and provided with means for supporting a cutting die and means for alining said die and vise, substantially as described.

6. A pipe vise, in combination with an arm pivoted below said vise in vertical alinement with the center thereof and adapted to swing in horizontal plane, a horizontal bearing at the free end of the arm, a die-carrier shaft revoluble and slidable in said bearing and a locking bail pivoted on the vise for engagement with said arm, substantially as described.

7. A pipe vise having a depending arm, the end of which is substantially parallel with the bottom of the vise, in combination with a step plate arranged on said end of the arm, means for adjusting said plate laterally and securing the same in adjustable position, a vertical shaft arranged between said plate and the bottom of the vise, a swinging arm adjustable on said shaft and at its free end provided with a horizontal bearing, and a shaft slidable and revoluble in said horizontal bearing, substantially as described.

In testimony whereof, I have hereunto set my hand, this 31st day of August, 1907, in the presence of two subscribing witnesses.

EZRA B. WERNER.

Witnesses:
M. O. Lee,
J. C. McClure.