

Oct. 16, 1928.

1,688,199

A. H. MEIER

PIPE VISE AND BENDER

Filed Jan. 24, 1927

3 Sheets-Sheet 1

Fig. 1.

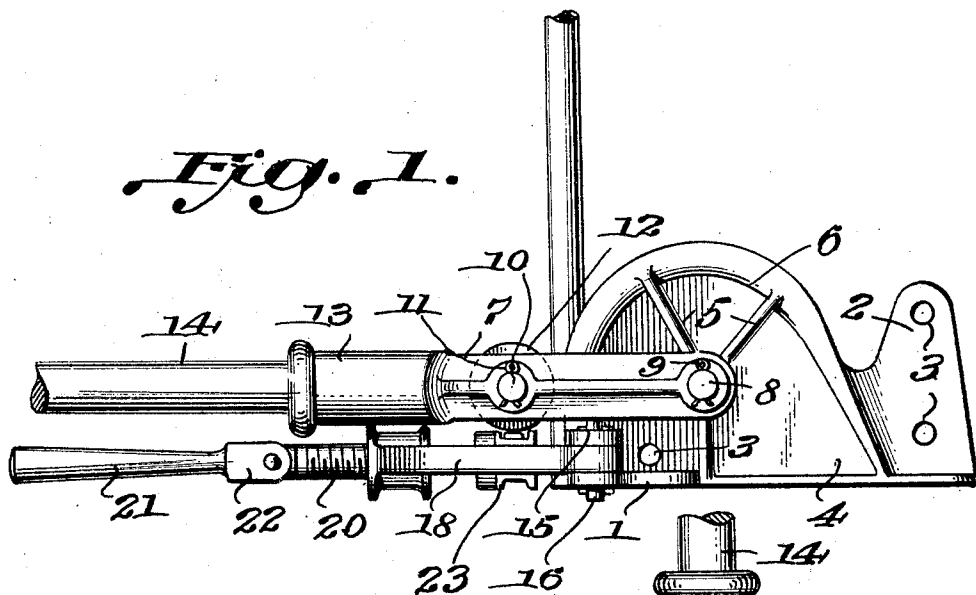
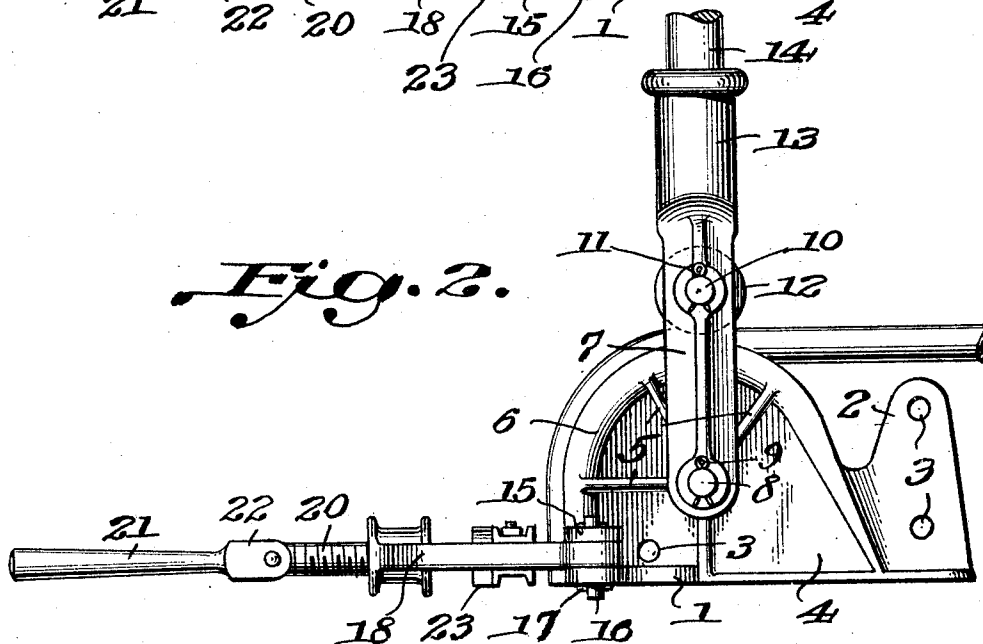


Fig. 2.



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Fig. 3.

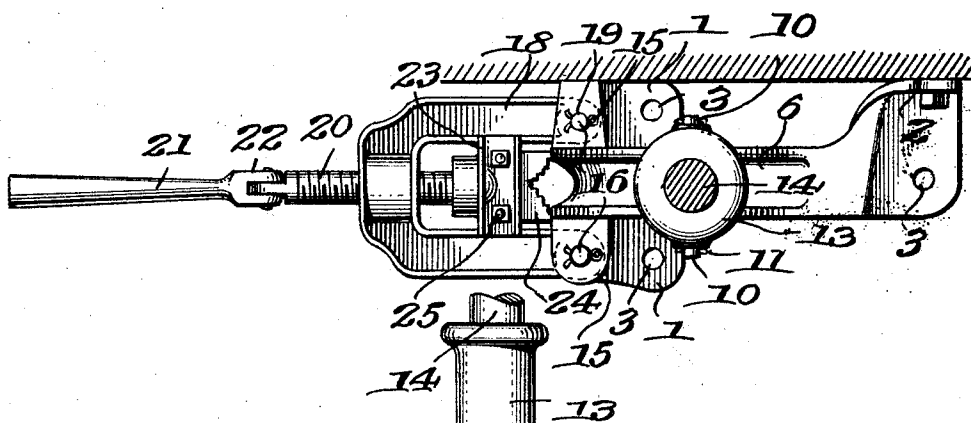


Fig. 4

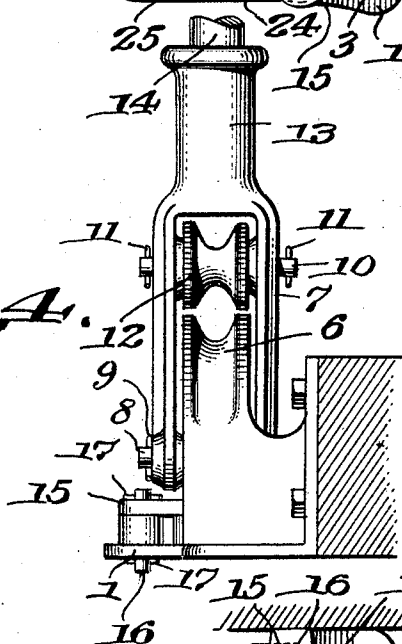
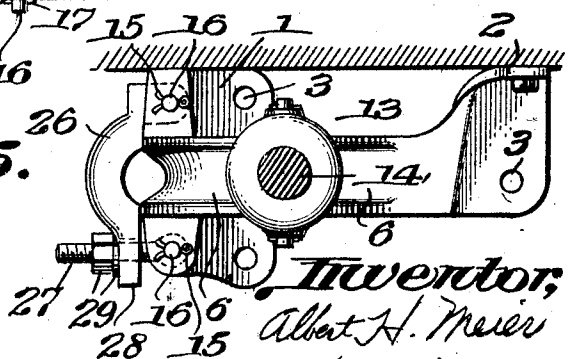


Fig. 5.



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Fig. 6.

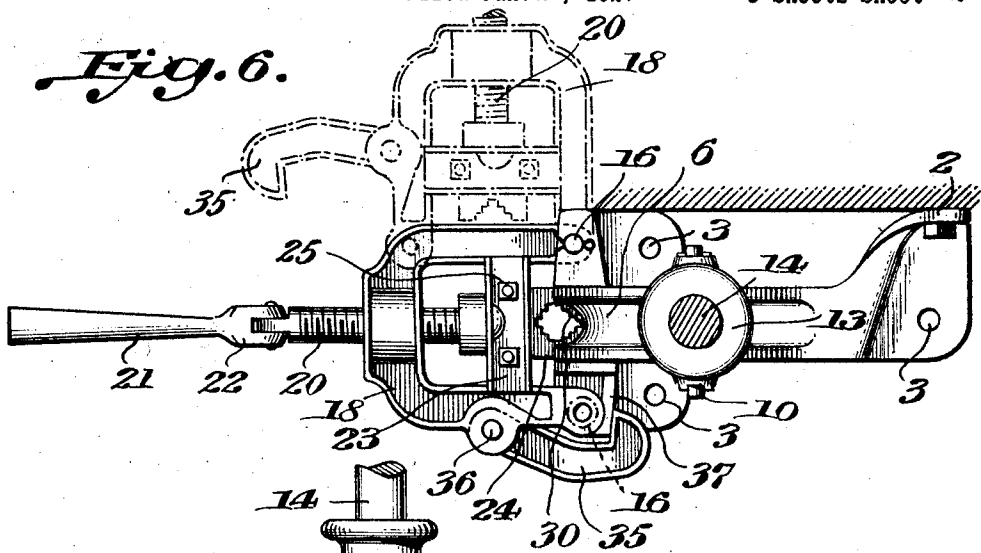


Fig. 7.

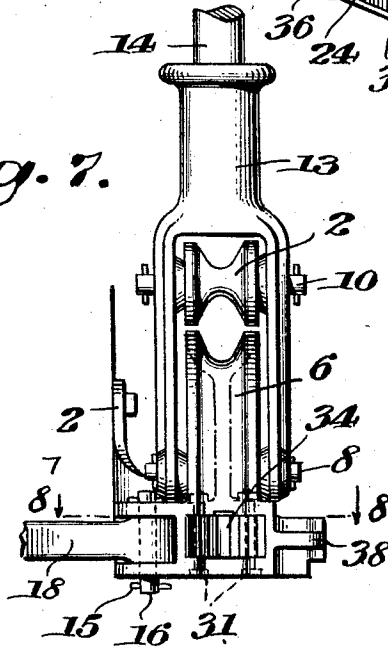


Fig. 8.

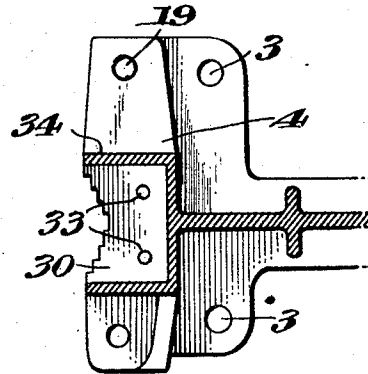
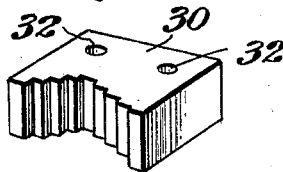


Fig. 9.



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UNITED STATES PATENT OFFICE.

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PIPE VISE AND BENDER.

Application filed January 24, 1927. Serial No. 163,244.

This invention relates to a pipe vise and bender which is an improvement on the pipe bender set forth in my Patent No. 1,136,252, dated April 20, 1915.

5 The object of the invention is to provide an improved combination bender and vise for all sizes and radii of rods, tubes, or conduits wherein the vise is utilized to grip the rod, tube, pipe or conduit to enable it to be bent 10 over the form by the bending lever and its roller, or, the vise may be used for the purpose of holding rods, tubes, pipes or conduits so that they may be cut off or threaded.

Another object is to provide a novel mounting for the vise which enables it to be quickly 15 secured in position to hold a pipe, rod, or conduit which is to be bent or threaded, or to be easily swung aside to enable the tube, rod, or pipe to be readily removed after it has been bent or threaded.

My present improvements combine in a single appliance of simple and durable construction a pipe, rod, conduit, or tube bender and vise capable of conjoint use and yet permitting independent use of the vise, thus providing two useful devices in a single appliance which is adapted to be secured to a 25 bench in a shop or to be carried from place to place and fastened where needed for use.

30 The bending appliance is so constructed that the lever used for operating it may be removed so that it will not be in the way when the vise alone is needed.

A practical embodiment of the invention which has been found to be successful is shown in the accompanying drawings in which:

Figure 1, is a side view, the pipe being held but not bent;

40 Fig. 2, is a similar view, the pipe being bent;

Fig. 3, is a plan view, the handle being in section;

Fig. 4, is an end view;

45 Fig. 5, is a plan view of a modification;

Fig. 6, is a similar view of another modification;

Fig. 7, is an end view thereof;

50 Fig. 8, is a section on line 8—8, Fig. 7; and

Fig. 9, is a detail view of the stationary jaw.

The brackets and form are cast in a single piece as a malleable casting. There are two brackets 1 and 2 arranged at right angles to each other so that the appliance may be fastened by bolts or screws to the bench or other

support according to the most convenient position for use.

Holes 3 are provided in the brackets and in the web of the form for the accommodation 60 of the necessary bolts or screws.

The form has a body 4 which is re-inforced by ribs 5 so that it will be given maximum strength with lightness. The groove 6 in the form is for the accommodation of the rod, 65 pipe, tube or conduit which is to be bent, and said groove is laid out on a curve, as usual in pipe benders.

The pipe bending lever comprises a yoke 7 which straddles the form and is pivoted on a 70 removable pin 8 which passes through the form, cotter's 9 being used to prevent displacement of the pin. The yoke has another removable pin 10 which is retained by cotter's 11, said pin constituting an axle for the 75 grooved bending wheel or roller 12. The yoke is provided with a socket 13 which removably receives an operating handle or lever 14. The handle or lever may be taken out when it is not needed, thus removing from the appliance all interference with the use of the vise now to be described. 80

Furthermore, the pins 8 and 9 may readily be removed to enable the yoke 7 to be taken off, if desired. 85

There are lugs or ears 15 which project from the opposite sides of the body parallel to the bracket. The bracket and the said ears or lugs 15 have holes to accommodate pins 16, held by cotter's 17 and serving to secure the 90 legs of the frame 18 of the vise.

The vise whose frame appears at 18 has the ends of its legs provided with holes 19 through which the pins 16 pass to hold said frame in position, the ends of the legs of the frame being located between the bracket and the lugs 15. 95

The vise has a screw 20 to engage with screw threads in the yoke 18 and provided with a handle 21 which is hinged to the upper 100 end of the screw at 22 so that it may be arranged crosswise of the screw and used as a lever for turning the screw, or, disposed in extended relation to the screw. The vise has a movable head 23 which slides on and is 105 guided by the legs of the yoke 18. A steel jaw 24 is removably connected to the head 23 by screw bolts 25 which enable steel jaws of other sizes to be substituted for the steel jaw 24, if desired. 110

The vise can be bodily removed by taking out the pins 16, or can swing on one of said

pins as a hinge, when the other pin is removed.

When using the appliance for bending a pipe, tube, rod, or conduit, the pipe, rod, or the like, is clamped against the form by operating the handle 21 to screw down the screw 20 so that the steel jaw 24 will engage the pipe, or the like. The handle or lever 14 having been inserted in the socket 13, the pipe, rod, or the like can easily be bent around the form and into the groove 6.

Should it be desired to use the vise by itself to hold a pipe, tube, conduit, or rod for purposes of cutting it off or screw threading it, the pipe, tube, conduit, or rod is clamped by the jaw 24. In that event, the handle 14 may be removed or even the yoke 7 may be taken off so that there will be no parts in the way to interfere with the action.

In Figure 5, there is shown a modified device for clamping the pipe while it is being bent. This comprises a clamp or jaw 26 which is pivoted on one of the pins 16, and an eye-bolt 27 which is fastened in position by the other pin 16, said eye-bolt being received in the bifurcated end 28 of the clamp. A nut and washer 29 on the eye-bolt 27, enable the clamp 26 to be moved and clamped against the pipe.

For the purpose of more securely clamping the pipe, tube, or the like which is to be bent, threaded, or cut off, I provide a stationary, but removable, steel jaw 30, shown in detail in Fig. 9, which may be secured to the body 4 in line with the jaw 24 in the manner best illustrated in Figs. 7 and 8, bolts 31, passing through holes 32 in the jaw 30 and holes 33 in the body 4 being provided. This manner of fastening, like that shown at 25 for the jaw 24, enables the jaw 30 to be removed, for reshaping or replacement, when desired. While the jaw 30 is not shown in detail in Figs. 3 and 5, it is to be understood that the body 4 may be formed with a jaw socket 34 for holding a jaw such as illustrated in Figs. 6 to 9 inclusive.

In the modification shown in Fig. 6, the yoke 18 is hinged on one of the pins 16 so that it may be quickly swung back, as shown by dotted lines. The other pin 16, shown by dotted lines, may be used, if desired, but it is,

preferably, omitted from this form of the invention to permit the quick-opening action mentioned, so that the tube, pipe, rod, or conduit, after being bent or threaded, may be rapidly removed.

For the purpose of securely latching the free part of the yoke without having to resort to the use of the locking pin 16 shown in dotted lines, I provide a hook or latch 35 which is pivoted to the yoke 18 at 36 and is adapted to engage and lock with the sloping shoulder 37 on body 4. The free arm of the yoke 18 is split and straddles the web 38, Fig. 7, to prevent springing of the yoke when latched down by the hook 35.

On releasing the hook 35 from the shoulder 37, the yoke 18 can be swung back, as shown in dotted lines, to permit quick removal of the bent or threaded pipe or the like. The yoke can then be quickly relatched as shown in full lines Fig. 6.

What I claim is:

1. In a pipe, rod, conduit, or tube bender, a body having a form over which the pipe, rod, conduit, or tube may be bent, said body also having a base and a bracket angularly disposed in relation to the base, either the base or the bracket adapting the body to be secured to a bench or other object.

2. In a pipe, rod, conduit, or tube bender and vise, the combination of a body having a form over which the pipe, rod, conduit, or tube may be bent, said body also having a base and a bracket angularly disposed in relation to the base, either the base or the bracket adapting the body to be secured to a bench or other object, said body being provided with parts extending out on opposite sides thereof and of the form and lying in a plane extending in the same general direction as that of the aforesaid base, a yoke whose legs are detachably secured to the parts which project out on opposite sides of the body as aforesaid, and lying in a plane extending in the same general direction as that of the aforesaid base, a jaw which is slidably carried by said yoke, a screw for operating the jaw, and a handle for operating the screw.

In testimony whereof I affix my signature.

ALBERT H. MEIER.