

E. S. STACK.
PIPE VISE.
APPLICATION FILED MAR. 1, 1912.

1,046,120.

Patented Dec. 3, 1912.

2 SHEETS—SHEET 1.

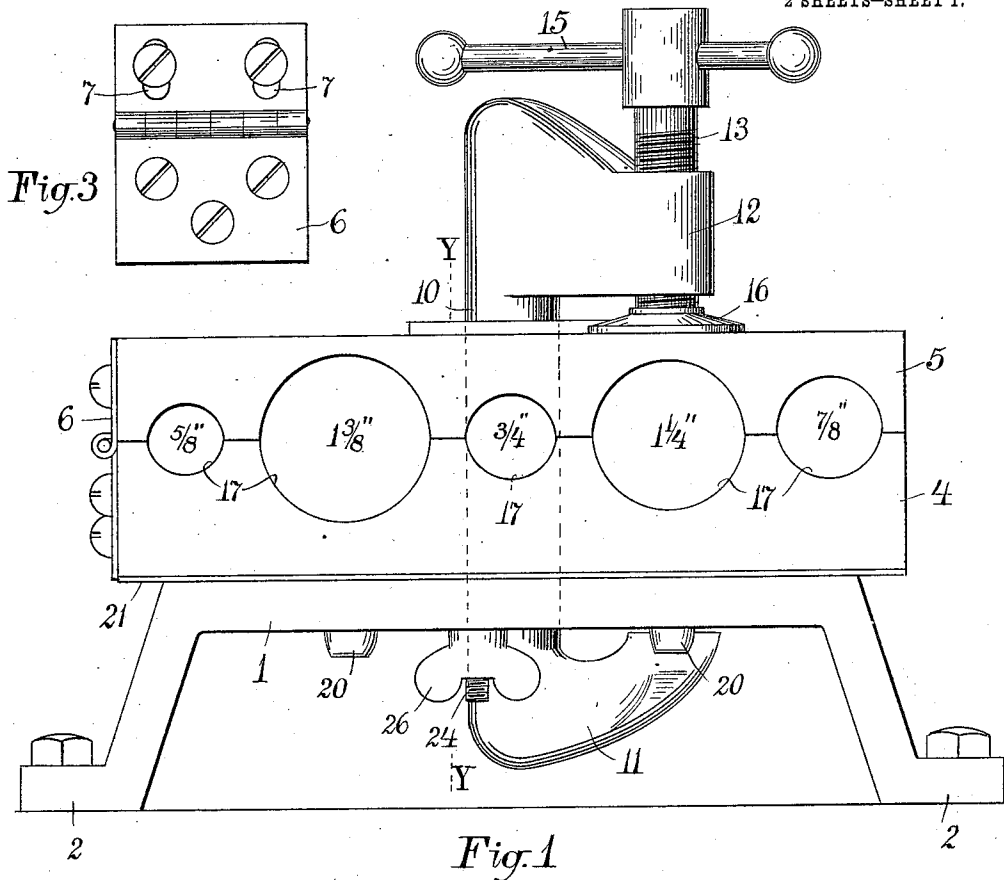


Fig. 1

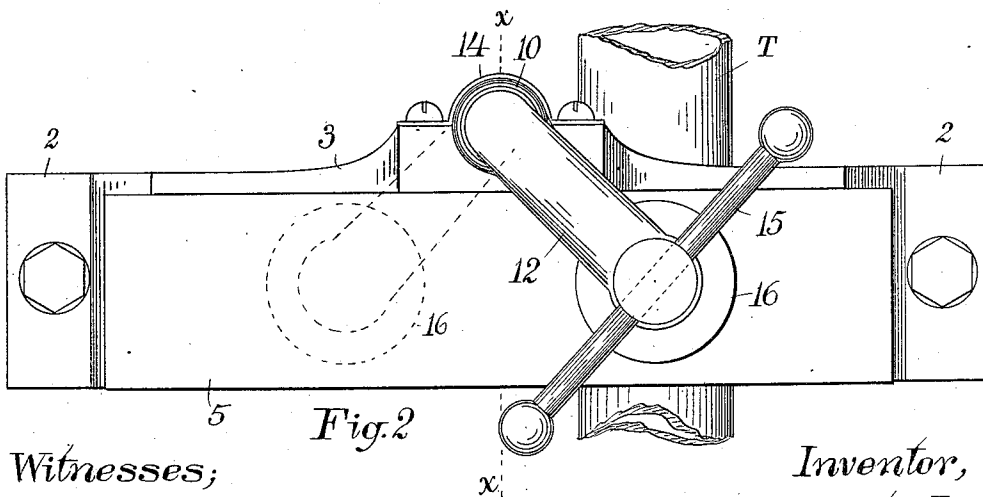


Fig. 2

Witnesses;

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Fig. 4

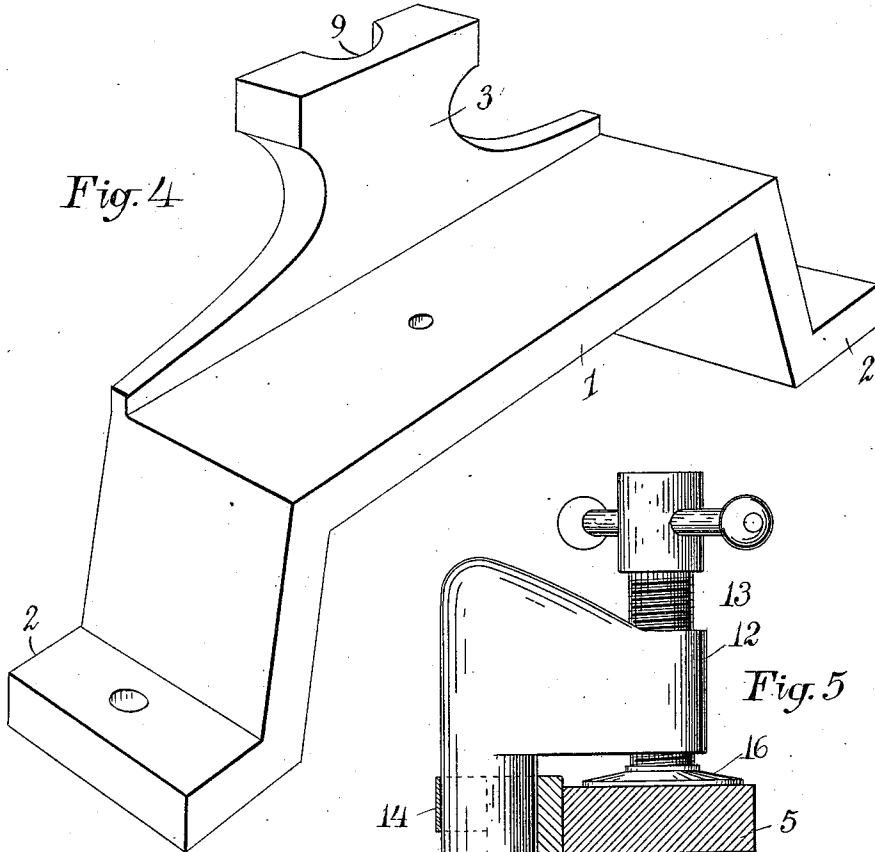


Fig. 5

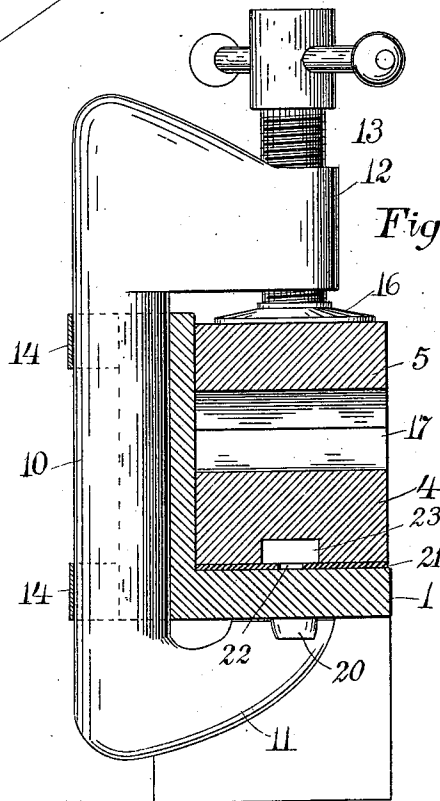
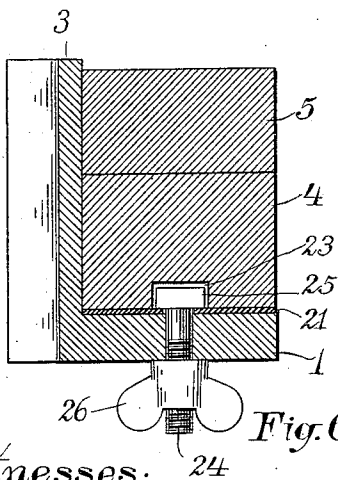


Fig. 6



Witnesses;

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UNITED STATES PATENT OFFICE.

ELMER S. STACK, OF SOMERVILLE, MASSACHUSETTS.

PIPE-VISE.

1,046,120.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed March 1, 1912. Serial No. 680,948.

To all whom it may concern:

Be it known that I, ELMER S. STACK, a citizen of the United States, and a resident of Somerville, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Pipe-Vises, of which the following is a specification.

The object of this invention is the construction of improved means for clamping or holding piping, round rods and the like, while the same is being cut apart, threaded or otherwise manipulated, the device being especially designed for brass tubing, nickel plated tubing and the like, the surfaces of which would be badly scratched and marred by usual forms of vises and gripping tools.

Referring to the drawings forming part of this specification, Figure 1 is a front elevation of a pipe vise made in accordance with my invention. Fig. 2 is a plan view of the same. Fig. 3 is an end view of the clamping jaws showing their slidable hinge connection. Fig. 4 is a perspective view of the standard alone. Fig. 5 is a cross section on the dotted line X—X in Fig. 2. Fig. 6 is a central cross section of the standard and jaws alone.

The standard consists of the base 1 having feet 2 adapted to be bolted down to a bench or other support, and a back 3. Seated on this base are the jaws 4, 5 loosely attached to each other at one end by a hinge 6 one or both members of which are formed with slots 7 for the fastening screws. The central part of the back 3 rises to substantially the level of the top surface of the jaw 5, and is formed with a vertical groove 9 in which is rotatably mounted the cylindrical intermediate section 10 which, with the terminal sections 11, 12 and the screw 13, composes the pressure applying device. Straps 14 serve to retain said device in place. The screw 13 is provided with an operating handle or arm 15, and a presser foot 16 adapted to contact with the upper surface of the jaw 5 and thereby to grip the piping inserted between the jaws.

As shown in Fig. 1, the jaws 4, 5 are formed with five pipe receiving openings 17 of different sizes and so arranged that the right hand opening is $\frac{7}{8}$ of an inch; the one next thereto is one and a quarter inches in diameter; the third one, $\frac{3}{4}$ of an inch; the fourth, one and three eighths inches, and the one at the extreme left is $\frac{5}{8}$ of an inch in

diameter. As also shown in Fig. 1, the presser foot and its opposing clamping section 11 are in the same vertical line with the opening having the $1\frac{1}{4}$ inch diameter, so that the tube T (Fig. 2) inserted therein will be directly between the points of gripping pressure. By swinging the terminal clamping sections around to the same angle shown in dotted lines in Fig. 2, said sections will be in the same vertical line with the opening of the $1\frac{3}{8}$ diameter. This enables the clamp to be instantly adapted for either of the two sizes named without shifting the position of the jaws upon the base. The advantage of this is evident when it is realized that said two sizes of openings are adapted for receiving the two sizes of pipes which are constantly being used together during the same job. In the same manner, by shifting the jaws so that the $1\frac{1}{4}$ hole is central, then the two sizes of openings, $\frac{3}{4}$ and $\frac{5}{8}$, are in position for the two locations of the presser foot; and these two openings are adapted for two other sizes of piping constantly used together. So also, by shifting the opening $1\frac{3}{8}$ to the midway position, the $\frac{3}{4}$ and $\frac{5}{8}$ openings are brought into coaction with the said foot, and for the same reason.

For limiting the two positions of the clamping terminals, I provide the stops preferably cast integral with the under surface of the base 1, as indicated in Fig. 1, and so located that the terminal section 11 will contact therewith and the clamping sections will be properly positioned, when the said sections are swung around past the back of the device. While it would be a much shorter arc to swing the same from one position to the other in front, yet the longer arc is much to be preferred since, by stopping the sections midway, not only is the presser foot out of the way so that the upper jaw can be raised and the pipe being operated on can be readily removed, but the presser foot is also out of the way of the pipe; for it is much easier to swing the pipe up and off the lower jaw than it is to pull it out longitudinally from its place between the jaws. Of course, when the clamping terminals of the C-clamp are thus swung back midway, the operating handle 15 should also be turned to present itself at right angles to the jaws, and so keep it out of the way of the pipes to be introduced to and removed from the jaws.

For holding the jaws in place upon the

base, a thin plate 21 is attached to the under surface of the lower jaw 4, as shown in Figs. 5 and 6, having a longitudinal slot 22 therein. Immediately above this slot is a wider groove 23 formed in the material composing the under jaw, while projecting from the base 1 is a bolt 24 having its head 25 in said groove. A nut 26 turning on the bolt beneath the base enables the bolt head to be drawn tightly down upon the plate 21 at the edges of its slot and so to fasten the jaws in place. The slot 22 is made long enough to permit the jaws to have all the travel required for the three different positions above described. The necessarily central position of this nut or thumb nut is another reason for having the C-clamp swing rearward, since the terminal section 11 could not swing past the nut and bolt thus lying midway between the two positions of said section.

The jaws are preferably composed of compressed fiber because of its toughness and strength combined with its faculty of not scratching or marring the brass or nickel tubing. In making the same, a solid block of proper dimensions is drilled with the holes 17 above described, and then a saw is run longitudinally through the block to separate it into the required two jaws. The saw kerf renders the pipe receiving openings or grooves shallower vertically than their horizontal dimensions, and therefore insures that the pipes laid therein will be suitably gripped thereby. It should be observed that the five holes provided give a capacity for seven sizes, since the $\frac{1}{8}$ tubing is equal to half-inch iron pipe; and $\frac{3}{8}$ tubing is equal to $\frac{3}{4}$ iron pipe. By having several different sizes of jaws, the same apparatus can be used for all kinds and sizes of work.

The object in having the hinge 6 slidable relative to the jaws is to permit the latter to lie flat upon each other when there is no piping between them, as well as to separate the space of the saw kerf when the piping is therein.

The positioning of the terminal sections of the C-clamp directly above and below the portion of the jaws containing the pipe or tubing being worked upon, prevents any breaking strain upon the jaws themselves such as would be the case were the pressure

applied to one point of the jaws while the tubing is located between another part. 55

What I claim as my invention and for which I desire Letters Patent is as follows, to wit:—

1. A pipe vise comprising a base, jaws slidably supported by said base, and a C-shaped clamp having its intermediate section pivotally supported to swing its terminal sections to different parts of said jaws. 60

2. A pipe vise comprising a base, jaws slidably supported by said base and having pipe receiving openings bearing predetermined relationships, and a C-clamp having its intermediate section rotatably supported, with one terminal section beneath said base and the other terminal section provided with a clamping screw, said base having stops for engaging the under terminal section and positioning said clamping screw above either of two related receiving openings. 65 75

3. A pipe vise comprising a base having a back, jaws supported by said base, a C-clamp having its intermediate section rotatably held by said back, and a clamping screw carried by a terminal section of the C-clamp. 80

4. A pipe vise comprising a base having a back, said back having a groove in the rear thereof, jaws supported by said base, and a C-clamp having its intermediate section rotatably held in said groove, one terminal section of the C-clamp having a clamping screw. 85

5. A pipe vise comprising a base, jaws slidably supported by said base and having a plurality of pipe receiving openings, a C-clamp having its intermediate section rotatably supported by said base and a terminal section provided with a clamping screw, and stops carried by said base, the other terminal section of the clamp being limited in its movement by contact with said stops for the purpose of positioning the clamping screw relative to said openings. 90 95

In testimony that I claim the foregoing invention, I have hereunto set my hand this 20th day of February, 1912. 100

ELMER S. STACK.

Witnesses:

ALEXANDER I. PECKHAM,
A. B. UPHAM.