(No Model.)

P. McHUGH.

PIPE VISE.

No. 581,079. Patented Apr. 20, 1897.

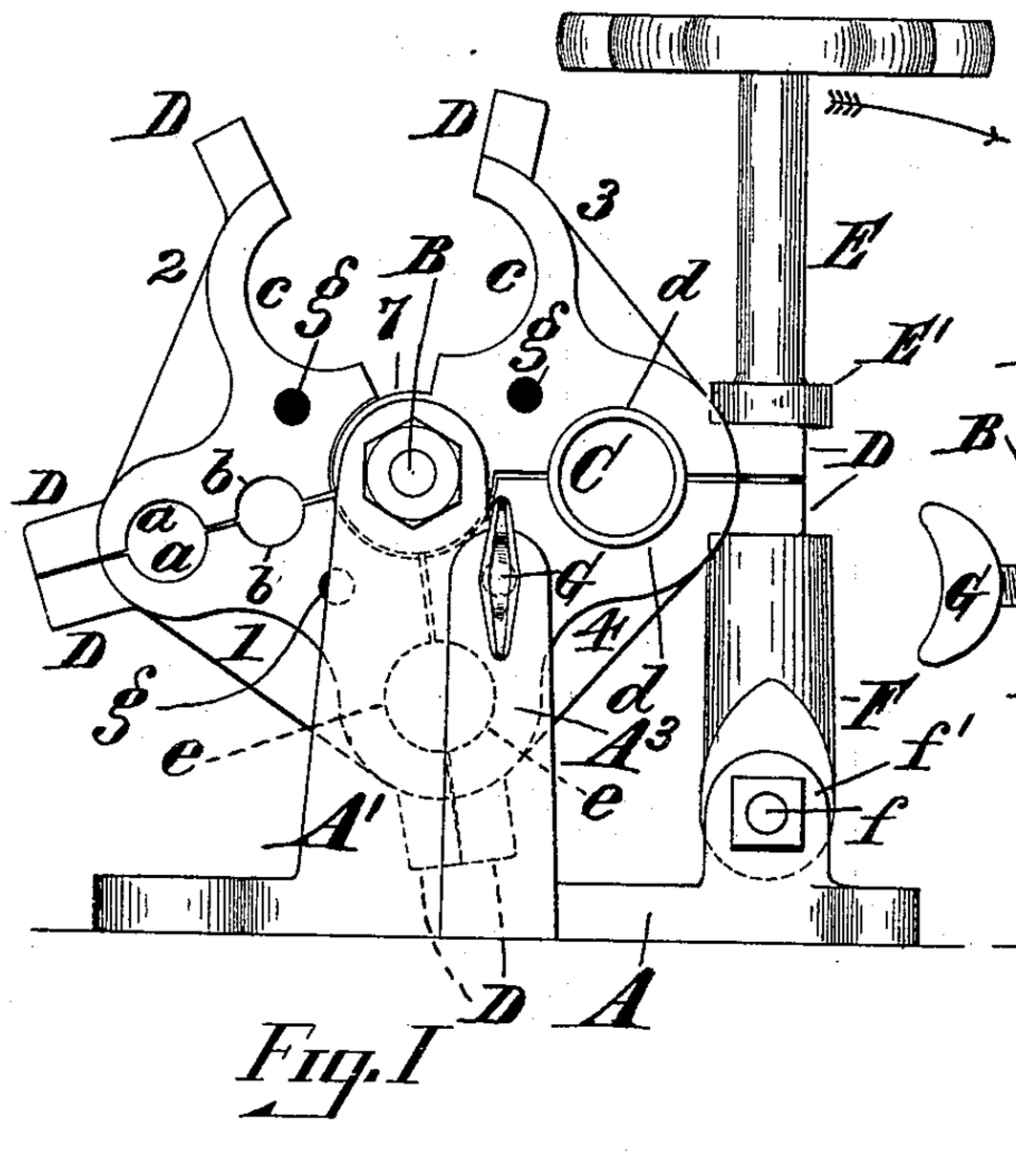

Fig. 1

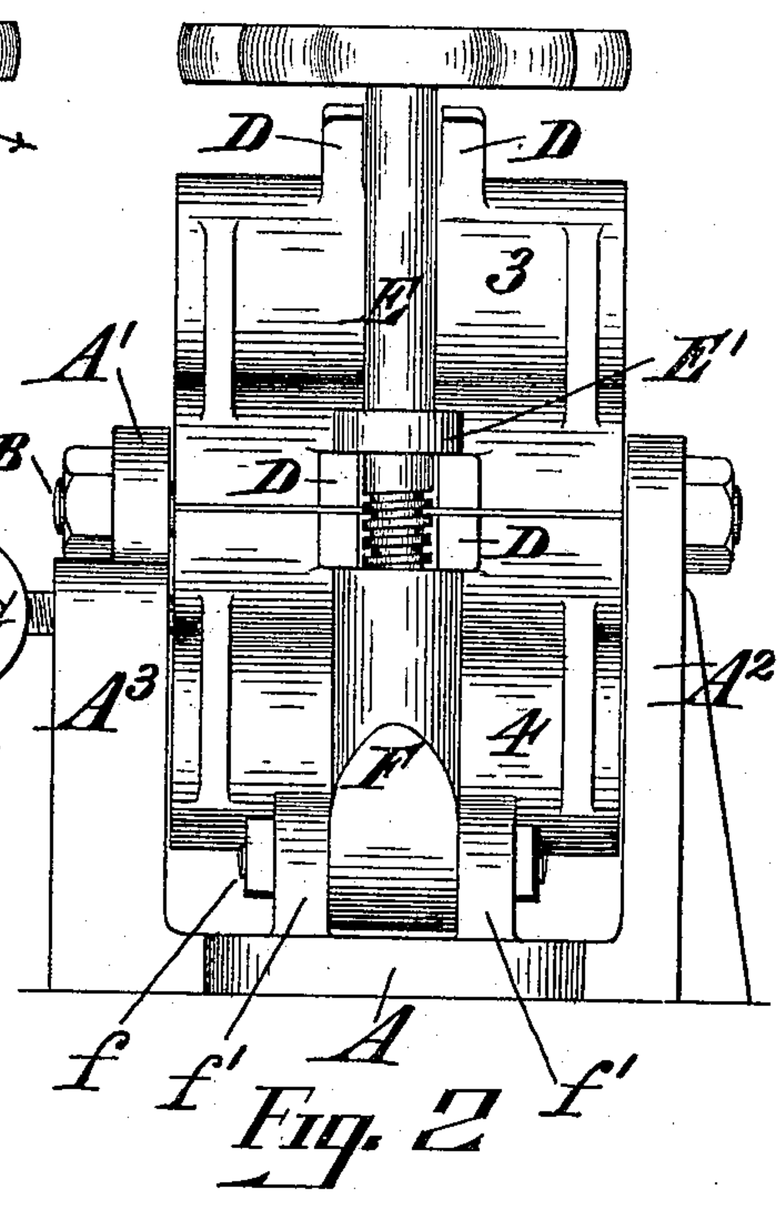

Fig. 2

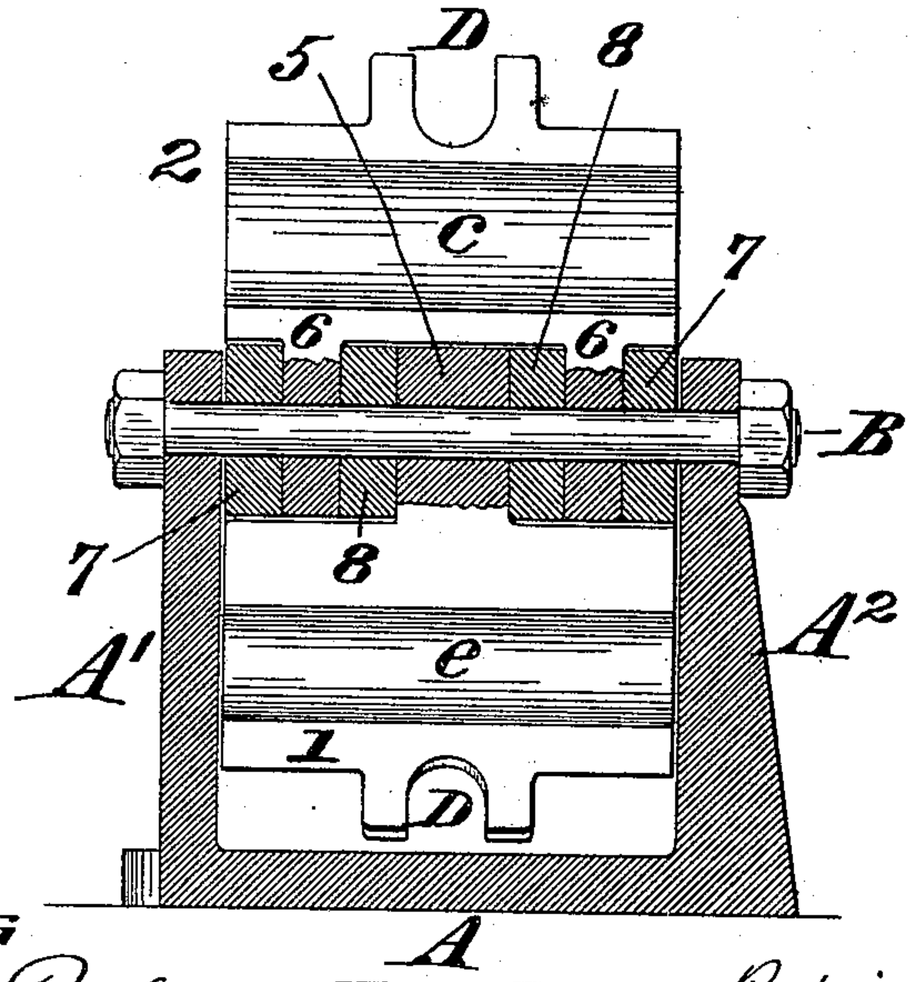

Fig. 3

WITNESSES

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UNITED STATES PATENT OFFICE.

PATRICK McHUGH, OF CINCINNATI, OHIO.

PIPE-VISE.

SPECIFICATION forming part of Letters Patent No. 581,079, dated April 20, 1897.

Application filed September 5, 1896. Serial No. 604,943. (No model.)

To all whom it may concern:

Be it known that I, PATRICK McHUGH, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Pipe-Vises, of which the following is a specification.

My invention relates to an improvement in pipe-vises; and it consists in the novel features of construction hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal elevation of a pipe-vise embodying my invention, a pair of jaws of the same being shown closed or clamped on a piece of pipe ready for the desired operation thereon; Fig. 2, an elevation of the right end of the vise seen in Fig. 1; and Fig. 3, a transverse sectional elevation along the axis of the revolving clamp-jaws, looking toward the left in Fig. 1.

A represents the vise base or bed plate having a pair of uprights or standards A′ A², between which is placed a circular series of jaws or grip-bars 1, 2, 3, and 4, the latter being mounted along their inner edges on a single transverse bolt B, which forms a spindle or bearing-shaft therefor.

The jaw-bar 1 has an eye or broad orificed lug 5 constructed on its inner edge, midway between its ends; the jaw-bar 2 a pair of narrow but similar eyes or lugs 6 6 on its inner edge, near its opposite ends; the jaw-bar 3 a pair of eyes or lugs 7 7, similar to those on jaw-bar 2, constructed on its inner edge at either end thereof; and the remaining jaw-bar 4 has a pair of eyes 8 8, similar to those on jaw-bars 2 and 3, constructed on its inner edge at either side its center. These eyes all correspond and take over the axle-bolt B, the eye 5 being at the center, the eyes 8 8 at either side said eye 5, the eyes 6 6 at either side said eyes 8 8, and the eyes 7 7 at either side said eyes 6 6, all as best shown in Fig. 3. The jaw-bars thus make a hinge-joint on the axle-bolt and are thereby adapted to both pivot and revolve thereon.

The several jaw-bars named all correspond in construction to each other, except that their gripping recesses or sockets differ in size to an extent that various diameters of pipes may be clamped between them. Thus the contiguous faces of jaw-bars 1 and 2 have corresponding recesses or sockets *a a* and *b b*, those indicated by *a a* being larger than those *b b* and both providing for two different sizes of pipe in the one pair of jaw-bars when they are brought together with said recesses registering, as best seen in Fig. 1. The jaw-bars being triangular in cross-section and hinged at their inner apexes on the axle-bolt B, two faces are presented, in each of which gripping-recesses are constructed.

The contiguous faces of jaw-bars 2 and 3 have gripping-recesses *c c*, which correspond in size and are the largest in the set of jaws shown in the drawings. The contiguous faces of jaw-bars 3 and 4 have the next largest gripping-sockets *d d*, which duly correspond and are shown in Fig. 1 as being clamped over a pipe C. The contiguous faces of the jaw-bars 1 and 4 have the next largest gripping-sockets *e e*, which duly correspond in size and are shown in dotted lines in Fig. 1.

D represents a central forked or notched lug constructed on both the outer edges of each of the jaw-bars, there being two on each jaw-bar, which respectively register when any pair of jaw-bars is brought together, Fig. 1 showing that three pairs of lugs are lying in contact with each other and three jaws closed, with one open, (that between jaw-bars 2 and 3,) and that one pair of said jaws on the contiguous faces of jaw-bars 3 and 4 are locked firmly together by means of a screw-clamp device, which is preferably pivotally mounted at its lower end on the base A. Said screw-clamp device is composed of a handled screw E, having a flange or collar E′, and an internally-threaded barrel or socket F, the latter being hinged or pivotally mounted on a transverse bolt *f*, which is supported at its opposite ends in lugs or upright bearings *f′ f′* on the base A. In clamping the forked lugs D they are made to rest on the top of socket or barrel F. Then the screw E is turned down till its collar or flange E′ comes into bearing contact therewith, as seen in both Figs. 1 and 2, thus firmly holding the pipe in the jaw-recesses between the bars 3 and 4. A plated or polished pipe may be placed between the jaws without danger of scratching, marring, or mutilation, and any pipe can be so placed

therein without danger of crushing or injury of any kind. When the pipe is to be released, the screw is raised slightly and swung to the right, thereby permitting the entire screw-clamp to turn downward to the right on its pivot-bolt in the direction of the arrow, seen in Fig. 1.

G represents a set-screw in the enlarged or extended portion A^3 of the standard A', and *g* represents each one of the sockets made in the adjacent end of each of the jaw-bars. These sockets are engaged in turn by the set-screw G when it is desired to hold a jaw-bar rigid and in the proper place when set for the clamping of the pipe and the action of the clamp-screw E, as is shown in connection with jaw-bar 4 in Fig. 1.

The jaw-bars, as seen between those indicated by 1 and 2 and 1 and 4 in Fig. 1, are so constructed that they have a converging or tapering space between them, which brings their outer edges close together at the tips of the lugs D. This feature is for the purpose of securing the proper purchase and full closing grip on the pipe when the latter is placed between a pair of jaws, as shown between bars 3 and 4 in Fig. 1, and the faces of the active jaws are not then brought into touching or limiting grip contact. The jaws are readily swung on their hinges to and from resting or gripping engagement with each other, and a wide blank changing or working space lies between but two of them at a time, such as that shown between the uppermost jaw-bars 2 and 3, as seen in Fig. 1. There is thus play enough between the jaws for readily inserting and withdrawing the pipe laterally to and from the locking pair of jaws, and a very useful and powerful vise is produced having revolving interchangeable jaws mounted on a single shaft and adapted to clamp different-sized pipes.

It is obvious that the jaws may have angular instead of round or semicircular sockets, in which square or rectangled material may be gripped or clamped, and instead of the pivotal screw-clamp device shown any other suitable well-known mechanism may be employed to lock the jaws against the pipe.

I claim—

1. In a pipe vise or grip, the combination of a base or bed plate having a pair of standards thereon; a single transverse spindle or shaft supported by said standards; a circular series of jaw-bars having grip-cavities and hinged upon said single shaft, between said standards; and a suitable clamping device for holding any two of said jaw-bars firmly closed or gripped against a pipe, tubing, or other object placed therein, substantially as herein set forth.

2. In a pipe vise or grip, the combination of a base or bed plate having a pair of standards; a single transverse spindle or shaft supported by said standards; a circular series of jaw-bars having grip cavities or sockets and hinged upon said shaft between said standards; a set-screw mounted on one of said standards and engaging the end of one of the jaw-bars to hold the same rigid when set and preventing the revolution thereof on the shaft; and a suitable screw-clamp device pivoted to the bed-plate and engaging ears or lugs on the jaw-bars which are to be locked against a pipe, tubing, or other object placed between them, substantially as herein set forth.

In testimony of which invention I have hereunto set my hand.

PATRICK McHUGH.

Witnesses:
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