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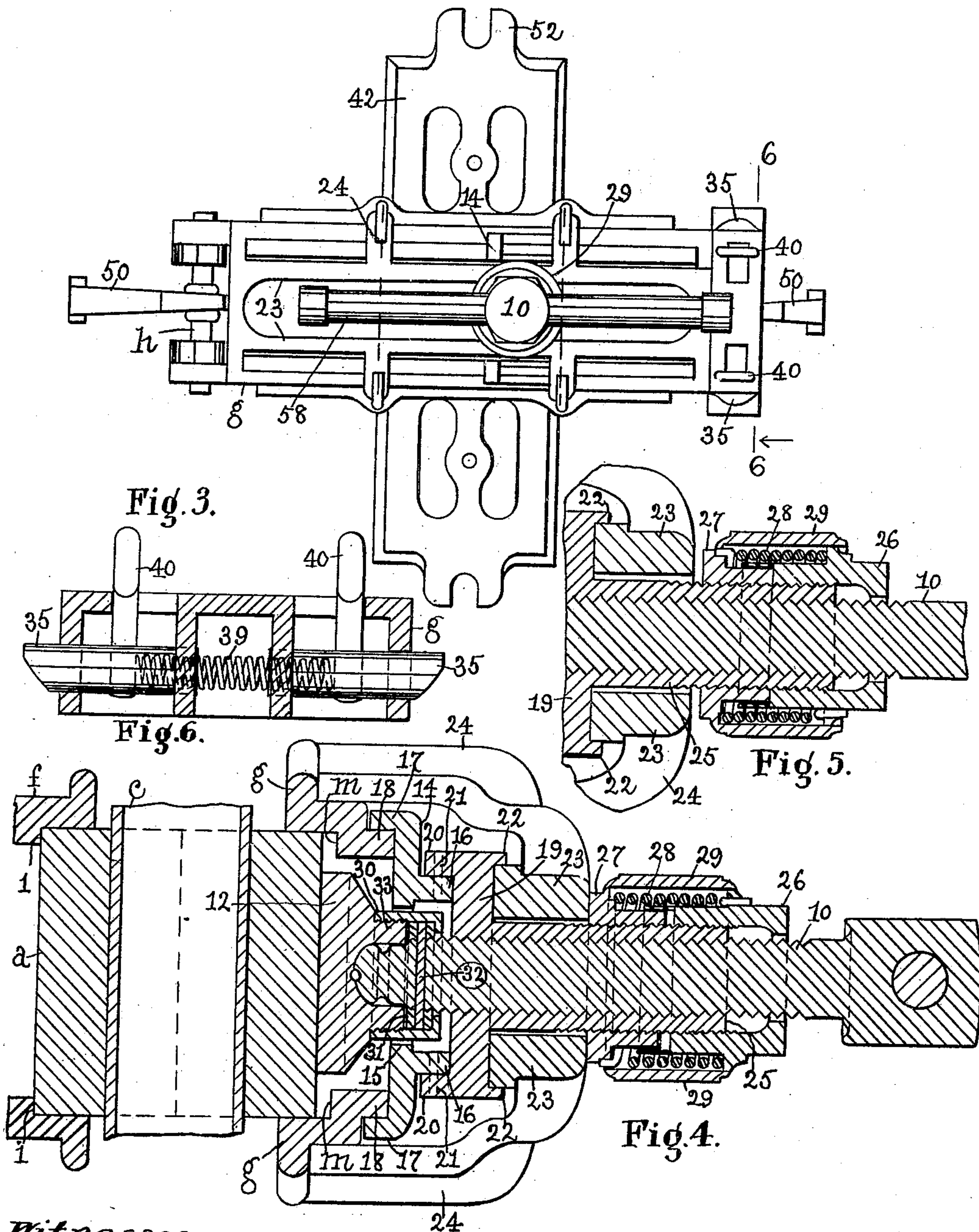
WISE.

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# UNITED STATES PATENT OFFICE.

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WISE.

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*To all whom it may concern:*

Be it known that I, JAMES JOHNSTON, a citizen of the United States, residing in Medford, county of Middlesex, and State of Massachusetts, have invented an Improvement in Vises, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to a portable vise especially designed and adapted among other uses to be employed by plumbers for holding brass, nickel or like pipe without injuring the same.

Provision is made for firmly securing or setting up the vise in any desired position, either horizontally or vertically, as will be described.

The portable vise is further provided with preferably wooden or other non-metallic jaws having recesses or cavities of different sizes for the reception of pipes of different diameters, and provision is made for applying pressure substantially over or in line with any one of the cavities, so that each pipe may be firmly held between the jaws with a maximum force or pressure.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is an elevation of a portable vise embodying this invention, showing the same as applied to a vertical post or support. Fig. 2, a like elevation of the vise showing the same in its open position. Fig. 3, a plan of the vise in a horizontal position, with the base plate at right angles to the vise proper. Fig. 4, a section on the line 4—4, Fig. 1. Fig. 5, a sectional detail to be referred to, and Fig. 6, a sectional detail on the line 6—6, Fig. 3.

Referring to the drawings, *a*, *b*, represent two jaws, preferably of wood or other non-metallic material, when the vise is to be used for firmly holding brass, nickel or like pipe *c*, which it is desired not to scratch or otherwise injure, but which jaws may be of iron or steel when the vise is to be used with iron pipe.

The jaws *a*, *b* may be designated the stationary and movable jaws, and are provided on their contiguous faces with a plurality of semi-circular grooves or recesses *d* of different radii, so as to enable the vise to be

used with pipes of different sizes or diameters. In the present instance, the jaws *a* *b* are shown as provided with five such grooves.

The jaws *a*, *b*, are mounted in jaw carriers *f*, *g*, which are pivotally connected at one end as at *h*, and are adapted to be locked in their closed position by a locking device as will be described, which is located at the opposite end of the same.

The jaw carrier *f* may be designated the stationary jaw carrier, and the jaw carrier *g* the movable jaw carrier. The stationary jaw carrier *f* as shown is recessed for the reception of the stationary jaw *a*, which rests upon shoulders *i* (see Fig. 4), and may be secured in fixed relation to the said jaw carrier by screws *k*. The jaw carrier *g* is made hollow for the reception of the jaw *b*, which is adapted to bear against shoulders *m* (see Fig. 4), when the vise is in its open position or condition, by means of springs *n*, which encircle screws *o* extended through the jaw *b* at its opposite ends and engaged with threaded sockets or holes in lugs or projections *p* on the jaw carrier *g*. The springs *n* serve to move the jaw *b* into the hollow carrier *g* and against the stops or shoulders *m*, when the pressure upon the jaw *b* is removed. Provision is made for applying pressure over or in line with the pipe *c* inserted between the jaws of the vise. For this purpose, I employ a presser comprising as shown a screw 10 (see Fig. 4), having a preferably detachable head 12, which may be circular in form and of a size or diameter equal to or greater than the diameter of the recess *d* for the largest size of pipe, and provision is made for moving the presser longitudinally of the jaw carrier *g*, so that the same may be brought into line with any one of the recesses in the jaw *b*, and provision is also made for locking or securing said presser in its adjusted position until positively moved by the operator. To this end a movable support is provided for the presser, which has a sliding engagement with the jaw carrier *g*, and a locking device movable with the said carrier coöperates with the same to firmly hold the presser support against movement on said carrier. In the present instance the movable support for the presser is shown as made in two parts or sections which may be designated the lower and upper parts or sections. The lower



part or section consists of a substantially flat plate 14 (see Fig. 4) having a central opening 15, ribs 16 on opposite sides of said opening, and side flanges 17, which fit over guiding ribs 18 on opposite sides of the longitudinally slotted jaw carrier *g*.

The upper part or section consists of a plate 19 having one set of side flanges 20, which are secured as by pins 21 to the ribs 16, and another set of side flanges 22, which fit over and are guided on side bars 23 of a slotted frame, which is located in the same plane as the jaw carrier *g* and is connected therewith by tie bars or arms 24.

The section 19 of the movable support or sliding carrier for the presser is provided with a tubular extension 25, provided with internal screw-threads which are engaged by the threaded shank or rod 10 of the presser, and which is provided on its exterior with screw-threads, which are engaged by nuts 26, 27, separated from each other and to which are secured the opposite ends of a helical spring 28 (see Figs. 4 and 5) which serves to rotate the nut 27 in such direction that it will be turned on the extension 25 into engagement with the side bars 23 of the slotted frame attached to the carrier *g*.

The nut 27 is provided with a tubular extension or sleeve 29, which serves to conceal and protect the spring 28. The spring-actuated nut 27 constitutes an automatic lock or holding device for the movable or sliding support for the presser, and serves to hold the presser in the position into which it is moved by the operator. To release the presser, the nut 27 is turned by the operator so as to wind up the spring 28 (see Fig. 5), and thereby disengage the nut from the side bars 23, and when the presser is thus unlocked, it may be moved longitudinally of the vise to position the presser with relation to the particular recess in the jaw *b* with which the pipe to be worked coöperates.

The presser head 12 may be detachably secured to the screw or threaded rod 10, which may be effected by an internally threaded sleeve or nut 30, which is fitted over the screw rod 10, is retained thereon by a collar 31 fastened on the rod by the pin 32, and engages a threaded projection 33 on the presser head 12.

The projection 33 may be provided with a socket for the reception of the end of the screw rod 10, which end may be round.

Provision is made for locking the jaw carriers *f*, *g*, together, and for this purpose, the movable jaw carrier *g* is provided with sliding bolts 35 (see Fig. 6), which extend transversely of said carrier and are adapted to be forced into holes 37 in lugs or ears 38 on the sides of the stationary jaw carrier *f*, by means of a spring 39 interposed between said bolts. In the present instance, a single spring is used, which has its end extended

into sockets in the inner end portions of the bolts. The bolts 35 may be provided with lugs 40 extended up through slots in the end of the movable jaw carrier *g*, so as to render them conveniently accessible.

Provision is made for firmly securing the vise to a wooden or other non-metallic support 41, such as a post or wall of the cellar or a room of the house. For this purpose, I employ a base plate 42, which is pivotally mounted on a hub or hollow boss 43 extended from the underside of the stationary jaw carrier *f*, and provided with screw-threads which are engaged by a nut 44 located in a recess 45 in the underside of the base plate, which nut serves to retain the base plate on said boss, while leaving the base plate free to be rotated on the said boss or the vise to be turned with relation to the base plate.

The base plate may and preferably will be provided with a square or angular socket 46 in line with the hollow boss for the reception of the head 47 of a large screw 48, which is extended through the hollow boss and is adapted to be screwed into the post or wall 41 by using the vise proper as an instrument for turning the said screw. The head 47 of the screw is confined in its socket 46 in the carrier *f* by the stationary jaw *a*.

In applying the vise to the post, the operator grasps the vise preferably with the jaw carrier locked together, and jams or forces the end of the screw 48 into the post until the thread catches into the same. He then turns the vise so as to force the screw farther into the post until the base plate 42 has been brought into sufficient proximity to the post to cause spurs or projections 49 on the base plate to enter the wood, after which the vise is turned until the base plate is brought into contact with the post or substantially so, and when this is done, the vise is turned into line with the base plate and locked thereto, by means of dogs 50 pivoted to the ends of the stationary jaw carrier *f* and engaging cam-shaped or inclined under surfaces 51 of slotted lugs or ears 52 on the ends of the base plate. The spurs 49 serve to resist movement of the base plate and the vise locked thereto and also serve to relieve the screw 48 from strain. Provision is made for retaining the locking dogs stationary in their unlocked position, that is, extended in line with the jaw carrier as represented in Fig. 3, so that the vise may be turned freely without the locking dogs striking the base plate 42. To this end, I have provided flat springs 55, which are secured to the ends of the jaw carrier *f* and have their free ends engaging the rear ends of the locking dogs, which ends may be provided with flattened portions 56 (see Fig. 1), which are engaged by the springs 55 and serve to hold the locking dogs stationary in their extended position.



tion in line with the stationary jaw carrier, until the locking dogs are turned by the operator to engage them with the lugs 52 on the base plate.

5 From the above description, it will be seen that the vise is portable and can be set up in the cellar or other place by the plumber or other operator in a short time, which avoids the necessity of the plumber carting  
10 the heavy bench and vise now commonly employed by him, and which is capable of being used for all kinds of pipes, and especially brass or nickel, without scratching or otherwise injuring the same. Furthermore  
15 the desired pressure is provided for gripping or holding each of a plurality of pipes of different sizes, for after the presser is adjusted on the movable jaw carrier in line with the pipe to be cut, threaded or other-  
20 wise worked upon, the screw 10 may be turned by the operator by means of the handle or bar 58, so as to force the movable jaw *b*, against the pipe *c* until the latter is firmly gripped or clamped between the  
25 jaws *a*, *b*.

I have herein described the invention as embodied in a portable vise provided with jaws having recesses or grooves for the reception of pipes, but it is evident that the  
30 vise may be used to advantage for other classes of work, for which it would only be necessary to replace the grooved jaws, with jaws having straight or flat surfaces.

I have herein shown the presser as operated by rotating the screw rod 10, but I do not desire to limit my invention to this particular method of operating the presser.

#### Claims.

1. In a vise, in combination, a base plate,  
40 a stationary jaw carrier pivotally connected thereto to turn in a plane substantially parallel to said base plate, means to lock said carrier to said base plate, a movable jaw carrier pivoted to said stationary jaw carrier,  
45 means to lock said jaw carriers together, cooperating jaws carried by said carriers and provided with a plurality of grooves or recesses for the reception of pipes of different diameters, a presser carried by said movable jaw carrier and adjustable thereon, and  
50 means to automatically lock said presser in its adjusted position, substantially as described.

2. In a vise, in combination, a base plate,  
55 a stationary jaw carrier pivotally connected thereto to turn in a plane substantially parallel to said base plate, means to lock said carrier to said base plate, a movable jaw carrier pivoted to said stationary jaw carrier,  
60 means to lock said jaw carriers together, cooperating jaws carried by said carriers and provided with a plurality of grooves or recesses for the reception of pipes of different diameters, a presser carried by said movable jaw carrier and adjustable thereon, and  
65

means to lock said presser in its adjusted position, substantially as described.

3. In a vise, in combination, a stationary jaw carrier, a movable jaw carrier cooperating therewith, a presser movable longitudinally of said movable jaw carrier and laterally with relation to the object inserted between said carriers, and means to secure said presser in its adjusted position on said movable jaw carrier, substantially as described. 75

4. In a vise, in combination, a base plate, a stationary jaw carrier pivotally connected with said base plate to turn in a plane substantially parallel with said base plate, a screw extended through said base plate and engaged with said stationary jaw carrier to turn therewith and having its end free to engage a support for the vise, means to lock said jaw carrier to said base plate, and  
80 a movable jaw cooperating with said stationary jaw carrier, substantially as described. 85

5. In a vise, in combination, a stationary jaw carrier, a jaw carried thereby, a movable jaw carrier, a jaw carried by it, a presser carried by and movable on said movable jaw carrier and cooperating with said movable jaw to move it toward said stationary jaw, means to retain said presser in  
90 its adjusted positions on said movable jaw carrier and springs to move said movable jaw in the opposite direction when the pressure of the presser is removed from said movable jaw, substantially as described. 100

6. In a vise, in combination, a stationary jaw carrier, a jaw carried thereby, a movable jaw carrier, a jaw carried by it, a presser carried by and movable on said movable jaw carrier and cooperating with said movable jaw to move it toward said stationary jaw, means to retain said presser in its adjusted positions on said movable jaw carrier and means to move said movable jaw  
105 in the opposite direction when the pressure of the presser is removed from said movable jaw, substantially as described. 110

7. In a vise, in combination, a base plate provided with lugs having inclined under surfaces, a stationary jaw carrier pivotally connected with said base plate to turn in a plane substantially parallel therewith, a movable jaw carrier cooperating with said stationary jaw carrier, and locking dogs pivoted to said stationary jaw carrier and cooperating with the inclined surfaces of the said lugs to lock the stationary jaw carrier thereto. 115

8. In a vise, in combination a stationary jaw carrier, a movable jaw carrier cooperating therewith, a base plate to which said stationary jaw carrier is pivotally connected, means to lock together said base plate and said stationary jaw carrier, and a pointed screw in fixed engagement with said sta-  
120 125 130



tionary jaw and having its pointed end projecting beyond said base plate, substantially as described.

9. In a vise, in combination, a stationary jaw carrier, a movable jaw carrier cooperating therewith, a base plate to which said stationary jaw carrier is pivotally connected, means to lock together said base plate and said stationary jaw carrier, said means comprising locking dogs and lugs which they engage, and springs to hold said dogs in their unlocked position, substantially as described.

10. In a vise, in combination, a jaw carrier provided with an angular socket and with a hollow boss extended from the underside of said carrier in line with said socket, a base plate pivotally mounted on said hollow boss, means engaging said boss to retain the base plate on said boss, and a screw having its head in said socket to turn with the said jaw carrier, and its threaded shank extended through said hollow boss, substantially as described.

11. In a vise, in combination, a stationary jaw carrier, a movable jaw carrier pivoted thereto at one end, and spring-actuated bolts for locking said jaw carriers at their opposite end, substantially as described.

12. In a vise, in combination, a base plate, a jaw carrier pivotally connected with said base plate to turn in a plane substantially parallel thereto, and a pointed screw extended loosely through said base plate and in fixed engagement with said jaw carrier to turn therewith, substantially as described.

13. In a vise, in combination, a stationary jaw carrier, a movable jaw carrier cooperating therewith, and a presser movable longitudinally of said movable jaw carrier into different positions between the ends of said

movable jaw carrier, substantially as described.

14. In a vise, in combination, a base plate, a stationary jaw carrier pivotally connected with said base plate to turn in a plane substantially parallel with said base plate, a pointed screw extended through said base plate and in fixed engagement with said stationary jaw carrier to turn therewith, and a movable jaw carrier cooperating with said stationary jaw carrier, substantially as described.

15. In a vise, in combination, a stationary jaw provided with a plurality of grooves or recesses for the reception of pipes of different diameters, a movable jaw having a plurality of grooves or recesses cooperating with the grooves or recesses in the stationary jaw, a presser cooperating with the movable jaw and adjustable thereon to bring it in alinement with different recesses in said jaws, and means to secure said presser in its adjusted position, substantially as described.

16. In a vise, in combination, a stationary jaw carrier, a movable jaw carrier, cooperating jaws carried by said carriers and provided with a plurality of grooves or recesses for the reception of pipes of different diameters, a presser carried by said movable jaw carrier and adjustable thereon to bring it in alinement with different recesses in said jaws, and means to secure said presser in its adjusted position, substantially as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES JOHNSTON.

Witnesses:

JAS. H. CHURCHILL,  
J. MURPHY.