

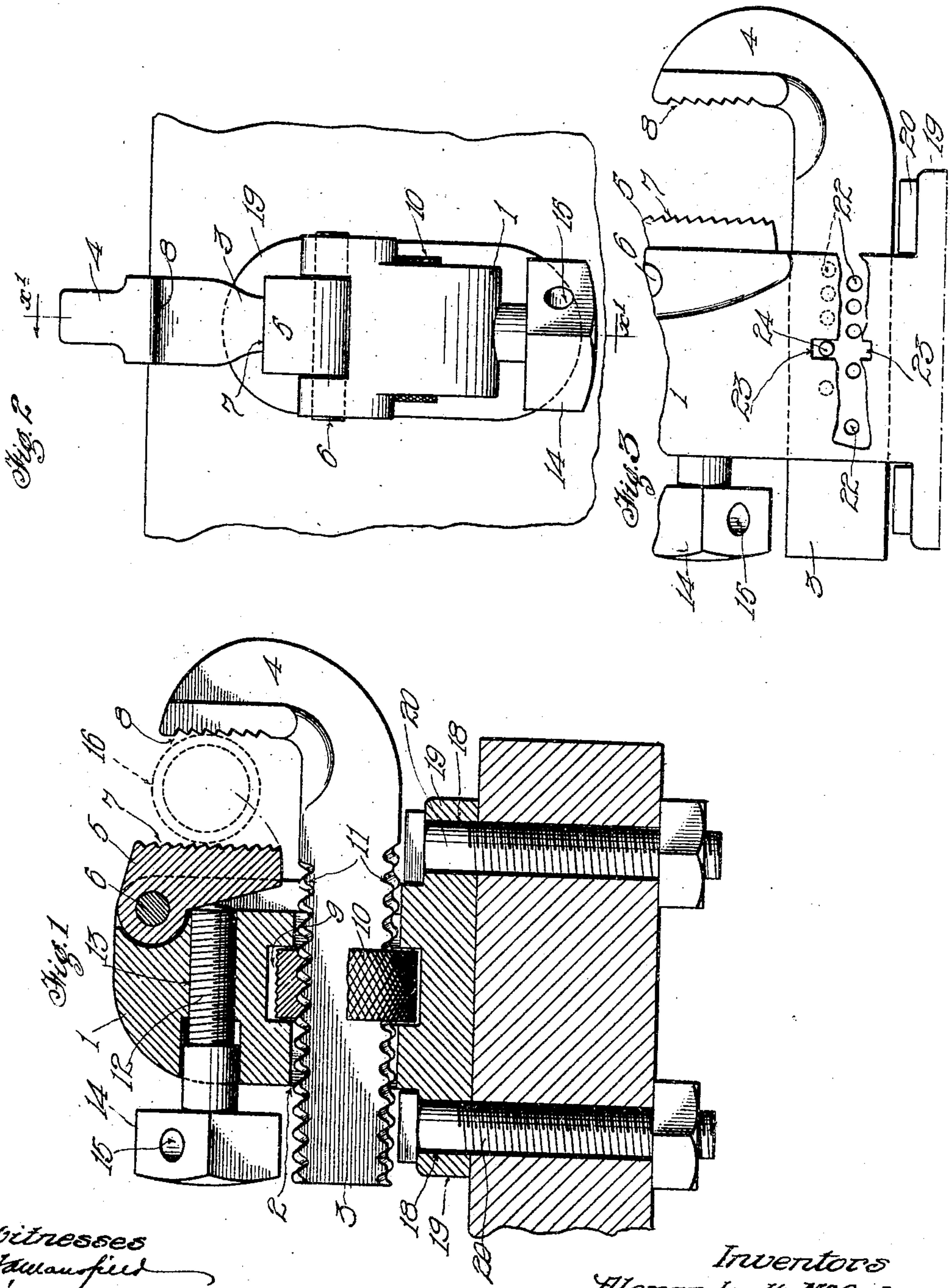
No. 814,228.

PATENTED MAR. 6, 1906.

A. W. McGAHAN & O. K. ASCHER.

PIPE VISE.

APPLICATION FILED SEPT. 17, 1904.



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# UNITED STATES PATENT OFFICE.

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## PIPE-VISE.

No. 814,228.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed September 17, 1904. Serial No. 224,855.

*To all whom it may concern:*

Be it known that we, ALEXANDER W. McGAHAN and OTTO K. ASCHER, citizens of the United States, residing at Los Angeles, in the county of Los Angeles, State of California, have invented certain new and useful Improvements in Pipe-Vises, of which the following is a specification.

The main object of this invention is to provide a pipe-vise of extreme simplicity in construction and efficiency in operation.

A further object of the invention is to provide a pipe-vise which is readily adaptable to different sizes of pipe and is provided with an adjustable means to give a powerful grip on the vise.

A further object of this invention is to provide a vise of this character which will be portable.

The accompanying drawings illustrate the invention.

Figure 1 is a vertical section on the line  $x-x'$  in Fig. 2. Fig. 2 is a plan. Fig. 3 is a vertical side elevation showing modified construction of the jaw-adjusting means.

1 designates the body of the vise having a seat or passage 2 formed thereon to receive and guide shank 3 of the movable or adjustable jaw 4. Said jaw extends laterally over said shank, so as to lie opposite a portion of the body 1, and a swinging jaw 5 is pivoted at 6 to said body, the face 7 of said swinging jaw being opposite face 8 of the sliding jaw 4. The pivot 6 of swinging jaw 5 is near the outer end of said jaw, so that the bearing of the jaw against the pipe will lie inwardly from the said pivot. Said faces 7 and 8 are desirably serrated or roughened, as shown, to enable them to take a firmer grip on the pipe. The swinging jaw 5 projects sufficiently beyond the body 1 to cause its working face 7 to be exposed in all positions of said jaw.

Suitable means are provided for holding the jaw 4 in set position on the pipe 1 according to the size of the pipe to be held. For example, the body 1 may have a slot 9 extending transverse to the opening 2 and receiving a nut 10, which surrounds the shank 3 and engages the screw-threaded portions 11 thereon, the said nut being preferably knurled externally to enable it to be more readily

turned and engaging at its ends with the end walls of the slot 9, so that movement of the nut in either direction will cause outward or inward movement, as the case may be, of the slidable jaw 4.

The swinging jaw 5 is provided with a movable device engaging therewith to force it toward the jaw 4, said device being preferably a screw 12, working in a tapped hole 13 in the body 1 and having an operating-head 14, preferably provided with a hole 15, so as to constitute a capstan-head adapted to receive and be operated by a pin or rod inserted in said hole.

The device is used as follows: The clamping member 5 being swung clear back, or nearly so, by screwing back the screw 12 the pipe (indicated at 16) is inserted between the jaws, the nut 9 being screwed out or in sufficiently so that the pipe will insert and substantially fit between the jaws. The clamping jaw or member 5 is then pressed up toward the pipe by screwing up the screw 12, so as to bind the pipe tightly between the opposing jaw of faces 7 and 8. Jaw 5 constitutes an abutment to engage and hold one side of the pipe, and the working portion of the jaw 5 is located between the working face of jaw 4 and pivotal support 6 of jaw 5. Furthermore, a line drawn across between the jaws at about the points of contact with the pipe therewith will pass inwardly of the pivotal supports 6, and the tightening-screw 12 is also located inwardly of the pivotal point—that is to say, between said pivotal point and the plane of the inner ends of the jaws. In consequence of this construction a rotative strain brought upon the pipe in a right-hand direction in Fig. 1 will cause the jaw 5 to tend to turn on the pivotal support 6 in such manner as to bind it more firmly against the pipe.

In order that the device should be effective as a pipe-vise, it is necessary that it should engage with the pipe to hold the same from rotation under rotative strains in either direction. To effect this, it is necessary, first, that both of the working faces 7 and 8 should be serrated, and, second, that the said working faces should not converge inwardly—that is to say, they should be capable of adjustment to parallel or to an inwardly-flaring po-



sition, with their inner ends as far apart or farther apart than their outer ends. The device will be operative in some degree when the jaws are placed parallel, as shown in Fig. 1; but to get the best results it is desirable that the swinging jaw should be allowed to swing inwardly a little from the position shown, so that the jaws will flare inwardly, and a rotative strain on the pipe in either direction will not tend to free it from the jaws, as would be the case with outwardly-flaring jaws. To enable the device to be operative in this manner, it is necessary that the working face 7 of the swinging jaw 5 should project beyond the body 1 when said jaw 5 is thus retracted to position parallel with or inwardly diverged from the other jaw. It is also necessary that the pivot 6 of the jaw 5 should be located near the outer end of the jaw, so that the pressure of the pipe on the jaw will have a tendency to swing the jaw to inwardly-diverging rather than inwardly-converging position, as otherwise the device would not be self-tightening on the pipe, but would be self-loosening.

The body 1 may have any suitable means for attaching it to a support; but we prefer to form the vise so as to be portable, adapted to be carried on the person and applied to any suitable support. Thus the body 1 may have openings 18 in its base 19 to receive bolts 20, which can be passed through and fastened on a bench or scantling or support of any kind, so that a plumber, for example, can attach the vise in any desirable position, whether vertical, horizontal, or inclined, on any suitable supporting part that may be ready to hand. It will be understood that the parts of the device as described will in such case be made sufficiently light to enable the vise to be carried on the person and, preferably, in the pocket. The simplicity of the construction conduces to this end, as does also the fact that the means for the final tightening is independent of the means for setting of the abutment-jaw. This independence of operation is also advantageous in that the setting adjustment can be made rapid in operation, as no power is required, while the clamping adjustment can be made powerful, as no large range of movement is required.

The means for supporting the abutment-jaw 4 and adjusting it to position to receive different sizes of pipe may be varied without departing from our invention. For example, the shank 3 of said jaw may be provided with perforations 22, any one of which can be brought opposite a slot 23 in the body 1, so that the fastening-pin 24 can be passed through said slot and perforation to hold the abutment-jaw in fixed position.

What we claim is—

1. In a vise, a body, an abutment-jaw slid-

able therein, means for holding the abutment-jaw in set position, a clamping-jaw pivoted to the vise-body opposite the abutment-jaw, the pivot of the clamping-jaw being near its outer end, and means on the vise-body engaging the clamping-jaw to force same toward the abutment-jaw, both of the said jaws being serrated and the clamping-jaw having its working face projecting beyond the body of the vise when the working faces of the jaws are parallel.

2. In a vise, a body having a passage there-through, an abutment-jaw having a shank slidable in said passage, means for holding the abutment-jaw in set position, a clamping-jaw pivoted opposite the abutment-jaw and extending between its pivotal point and the abutment-jaw, the said pivotal point being located outwardly from the bearing portion of the clamping-jaw, and means engaging the clamping-jaw to force same toward the abutment-jaw, both of the said jaws being serrated and the clamping-jaw having its working face projecting beyond the body of the vise when the working faces of the jaws are parallel.

3. In a vise, a body, an abutment-jaw slidable therein, means for holding the abutment-jaw in set position, a clamping-jaw pivoted to the vise-body opposite the abutment-jaw, the pivot of the clamping-jaw being near its outer end, both of the said jaws being serrated and the clamping-jaw having its working face projecting beyond the body of the vise when the working faces of the jaws are parallel, and a screw working in the body of the vise, engaging the clamping-jaw to force same toward the abutment-jaw.

4. In a vise, a body having a passage there-through, an abutment-jaw having a shank slidable in said passage, and provided with a screw-threaded portion, a nut engaging said screw-threaded portion and also engaging the vise-body to hold it from endwise movement and cause movement of the abutment-jaw on rotation of the nut, a clamping-jaw pivoted to the vise-body opposite the abutment-jaw, the pivot of the clamping-jaw being near its outer end, and means on the vise-body engaging the clamping-jaw to force same toward the abutment-jaw, both of the said jaws being serrated and the clamping-jaw having its working face projecting beyond the body of the vise when the working faces of the jaws are parallel.

5. A vise-body having a passage there-through and a slot transverse to said passage, an abutment-jaw having a shank slidable in said passage, and having means engaging in said slot and with an abutment-jaw to hold the abutment-jaw in set position, a clamping-jaw pivoted to the vise-body opposite the abutment-jaw, the pivot of the clamping-jaw

being near its outer end, and means on the  
vise-body engaging the clamping-jaw to force  
the same toward the abutment-jaw, both of  
the said jaws being serrated and the clamp-  
5 ing-jaw having its working face projecting  
beyond the body of the vise when the work-  
ing faces of the jaws are parallel.

In testimony whereof we have hereunto set

our hands, at Los Angeles, California, this 7th  
day of September, 1904.

ALEXANDER W. McGAHAN.

OTTO K. ASCHER.

In presence of—

A. P. KNIGHT,

TILLIE E. ADAM.