F. J. CALLAN, DEC'D.
A. E. REIMER, EXECUTOR.
QUICK ACTING PIPE VISE.
APPLICATION FILED OCT. 12, 1921.

1,421,065. Patented June 27, 1922.

FIG. 1.

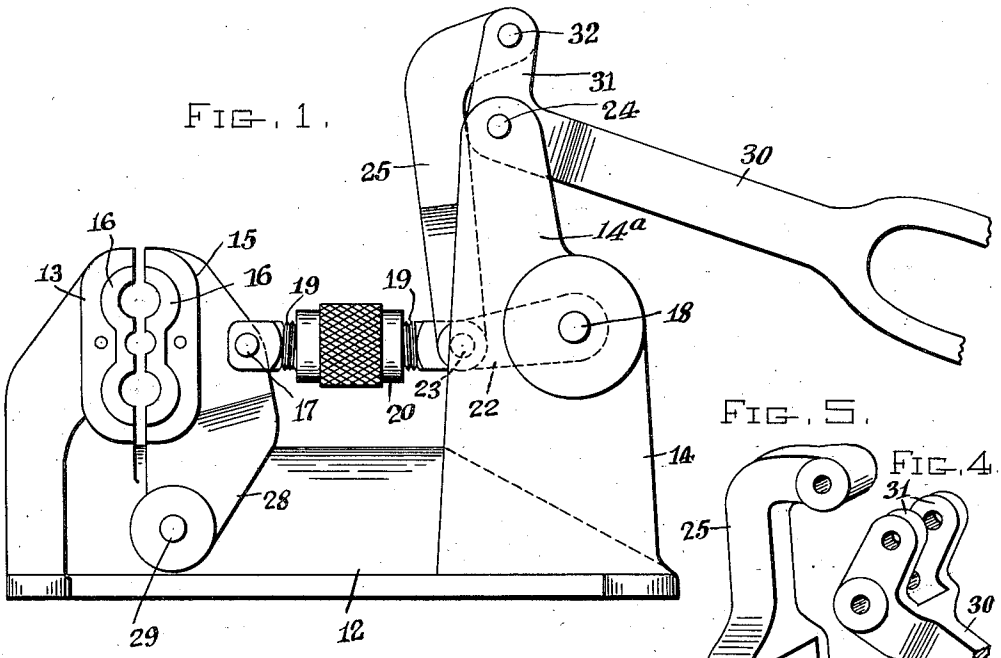


FIG. 5.

FIG. 4.

FIG. 7.

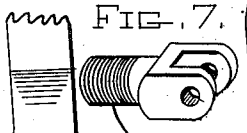


FIG. 6.

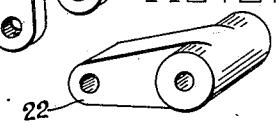


FIG. 2.

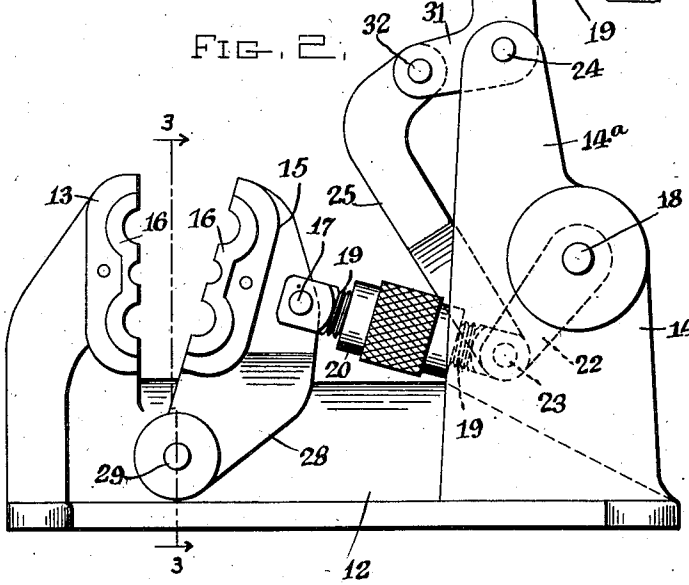
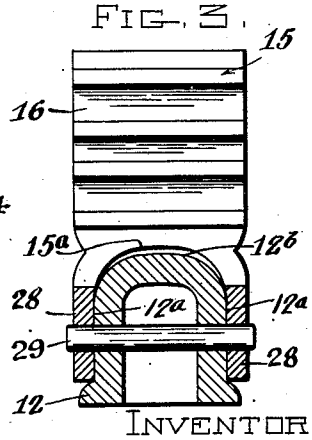


FIG. 3.



INVENTOR
F. J. Callan deceased
Arthur E. Reimer Executor
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ATTORNEYS

UNITED STATES PATENT OFFICE.

FRANK J. CALLAN, DECEASED, LATE OF BOSTON, MASSACHUSETTS, BY ARTHUR E. REIMER, EXECUTOR, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HERBERT G. BUTT, OF WINTHROP, MASSACHUSETTS.

QUICK-ACTING PIPE VISE.

1,421,065. Specification of Letters Patent. Patented June 27, 1922.

Application filed October 12, 1921. Serial No. 507,301.

To all whom it may concern:

Be it known that FRANK J. CALLAN, a citizen of the United States, late of Boston, in the county of Suffolk and State of Massachusetts, deceased, did in his lifetime invent new and useful Improvements in Quick-Acting Pipe Vises, of which the following is a specification.

This invention relates to a vise the jaws of which may be quickly closed and opened and are automatically locked when closed, the jaws being preferably adapted to hold cylindrical bodies, and the vise being especially adapted for the use of plumbers.

A vise characterized as above stated is disclosed by the Callan Patent No. 1,112,192 dated September 29, 1914.

The present invention is embodied in the improvements hereinafter described and claimed on the structure disclosed by said patent, the object of said improvements being to increase the strength and efficiency of the vise and to enable the muscular power of the operator to be more advantageously exerted in closing the jaws than heretofore, and without the liability heretofore existing of breaking parts of the vise when heavy pressure is exerted on the jaws.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a side elevation of a vise embodying the invention, the jaws being closed.

Figure 2 is a side elevation showing the jaws opened.

Figure 3 is a section on line 3—3 of Figure 2 and a side view of the movable jaw.

Figure 4 is a fragmentary perspective view showing a portion of the bell crank lever hereinafter described.

Figure 5 is a perspective view of the link which connects the bell crank lever with the toggle knuckle.

Figure 6 is a perspective view of one of the toggle links.

Figure 7 is a perspective view of one of the sections of the other toggle link.

The base 12 of the vise is elongated and is provided at one end with a fixed jaw 13, and at the opposite end with a fixed standard 14, the upper portion of which is composed of two spaced apart ears 14ª between which is pivoted the bell crank operating lever hereinafter described. Only one of said ears is shown by the drawing, the ears being duplicates of each other. The base, the fixed jaw and the standard are preferably cast in a single piece. 15 represents a movable jaw adapted to cooperate with the fixed jaw 13 in grasping a pipe or other article. As here shown, the jaws are provided with detachably secured Babbitt metal face plates 16 suitably grooved.

A toggle extends between the movable jaw 15 and the standard, and is connected with the movable jaw by an outer pivot 17 and with the standard by an inner pivot 18. The toggle includes a sectional outer link of variable length composed of two screw threaded sections 19 and an intermediate tubular internally threaded section 20, said sections being threaded to constitute a turnbuckle adapted to be lengthened and shortened by rotating the section 20. One of the sections 19 is engaged with the outer pivot 17. The toggle also includes an inner link 22 located within the standard 14 and engaged with the outer pivot 18. The sectional outer link and the inner link 22 are connected with each other by a pivot or knuckle pin 23. A manually operated lever fulcrumed at 24 to the standard ears is connected by a link 25 with the pivot 23 at the toggle knuckle.

The construction thus far described is substantially identical with that disclosed by the said Callan patent, the arrangement being such that when the jaws are closed as shown by Figure 1, the toggle is active and the movable jaw 15 is rigidly held or locked by the toggle, which is maintained in its active position by the weight of the hand lever. When the toggle is inactive or broken as shown by Figure 2, the movable jaw is moved away from the fixed jaw, the jaws being opened. One of the improvements constituting the present invention is embodied in a hinge connection between the movable jaw and the base, instead of the sliding connection shown by the Callan patent. Said hinge connection permits substantially frictionless movements of the movable jaw by the toggle, and ensures freedom from the liability of breakage of the movable jaw and other parts, which has been found to exist when said sliding connection was employed. The hinge connection is preferably provided as next described.

The base 12 has upright side faces 12ª

and a top face 12^b. The movable jaw 15 has a bottom face 15^a which is raised above the top face 12^b when the jaws are closed and bears on said top face when the jaws are opened, so that the base limits the opening movement of the movable jaw. Formed on the movable jaw and projecting downward from the face 15^a thereof are two apertured ears 28 which overlap portions of the side faces 12^a of the base. 29 represents a pintle member fixed to the base and projecting from the upright side faces thereof, the ends of said member having a loose fit in the apertures of the ears 28. The described hinge connection practically eliminates frictional resistance to movements of the movable jaw, so that the jaw cannot stick or bind when being forced toward the fixed jaw. The muscular force of the operator is therefore exerted to good advantage in causing the movable jaw to grip the work without having to overcome frictional resistance and without liability of breakage. The hinge connection also enables the sectional toggle link to be easily adjusted, there being no frictional resistance to the lengthening or shortening of said link. Another improvement resides in the manually operated lever above mentioned, fulcrumed at 24 to the standard and connected by the link 25 with the toggle knuckle. Said lever is of bell crank form and is composed of a relatively long handle arm 30 and a shorter arm 31, the fulcrum 24 being located at the junction of the two arms. The link 25 is pivoted at 32 to the shorter arm.

It will be seen that the two armed lever enables the operator to exert a more powerful leverage on the toggle than is possible when the operating lever has a single arm as shown by the Callan patent.

I claim as the invention of FRANK J. CALLAN, deceased:

1. In a quick acting vise, in combination, an elongated base having a fixed jaw at one end and a fixed standard at the opposite end, a movable jaw between the fixed jaw and the standard, a toggle connected by an outer pivot with the movable jaw, and by an inner pivot with the standard, operating means for forcing the toggle to a position of rest with the jaws opened, and to an active position with the jaws closed, and a hinge connection between the movable jaw and the base whereby substantially frictionless movements of the jaw by the toggle are permitted, and freedom from liability of breakage is ensured.

2. In a quick acting vise, in combination, an elongated base having a fixed jaw at one end and a fixed standard at the opposite end, a movable jaw between the fixed jaw and the standard, a toggle connected by an outer pivot with the movable jaw, and by an inner pivot with the standard, operating means for forcing the toggle to a position of rest with the jaws opened, and to an active position with the jaws closed, the base being provided with upright side faces and with a top face between the side faces, the movable jaw being provided with a lower end face adapted to be seated on said top face when the jaws are opened, and a hinge connection between the movable jaw and the base, embodied in apertured ears projecting downward from the lower end face of the jaw and overlapping portions of the upright side faces of the base, and a pintle member projecting from said side faces and entering the apertures of said ears.

3. A quick acting vise embodying the combination specified by claim 1, the said operating means being embodied in a bell crank lever having a longer handle arm and a shorter arm, said lever being fulcrumed to said standard at the junction of said arms, and a link pivoted at one end to said shorter arm and at the opposite end to the knuckle of said toggle.

In testimony whereof I have affixed my signature.

ARTHUR E. REIMER,
Executor of Frank J. Callan, deceased.