(Model.)

2 Sheets—Sheet 1.

J. DENNIS.

VISE.

No. 263,872. Patented Sept. 5, 1882.

Fig. 1.

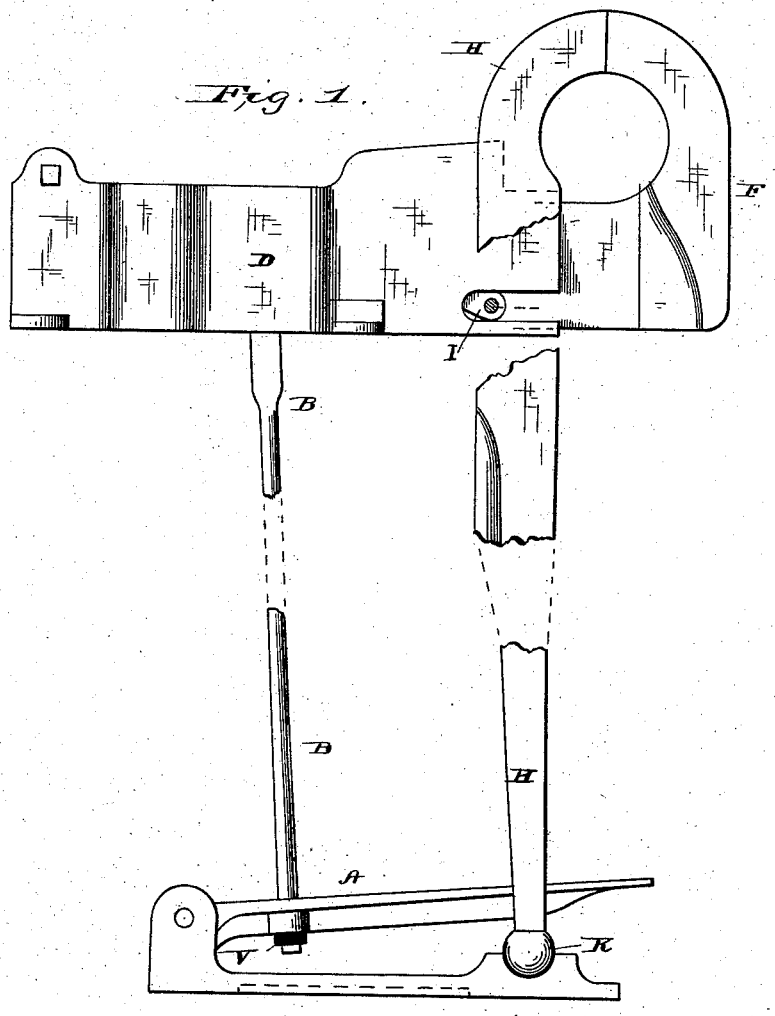
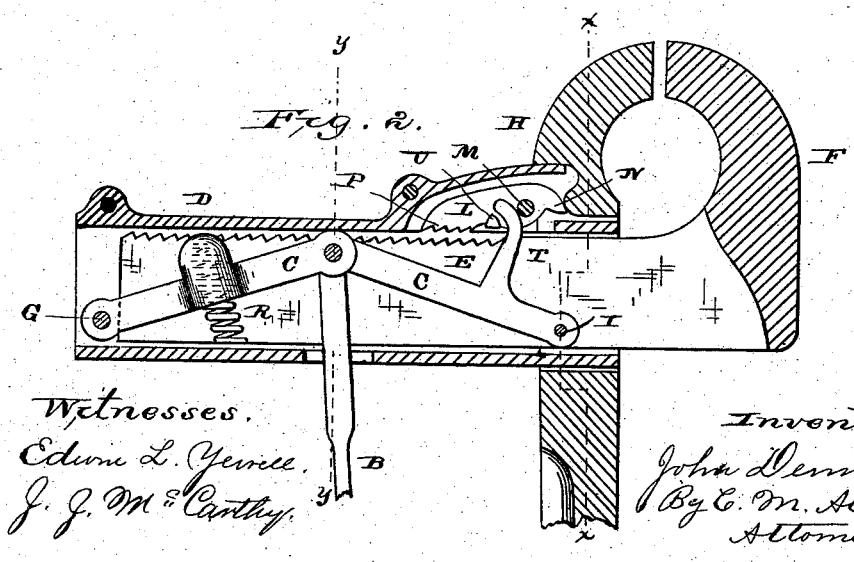


Fig. 2.



Witnesses.
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(Model.) 2 Sheets—Sheet 2.

J. DENNIS.

VISE.

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Fig. 3.

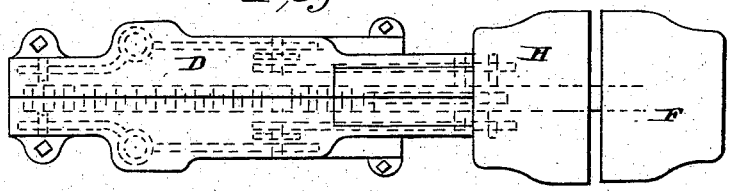


Fig. 4.

Fig. 5.

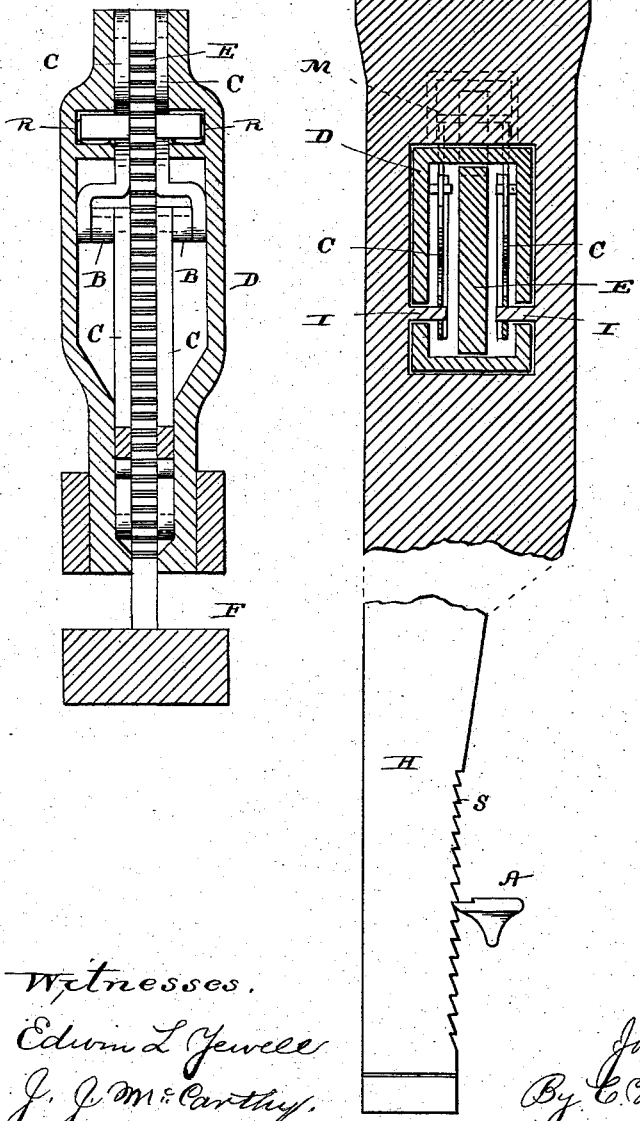
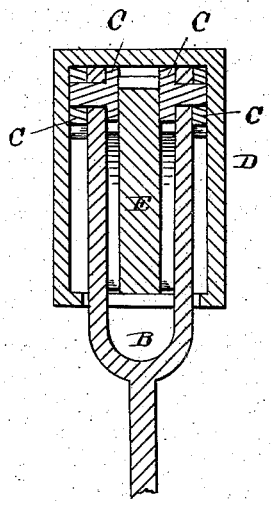


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN DENNIS, OF LOWELL, MASSACHUSETTS.

VISE.

SPECIFICATION forming part of Letters Patent No. 263,872, dated September 5, 1882.

Application filed July 6, 1882. (Model.)

To all whom it may concern:

Be it known that I, JOHN DENNIS, of Lowell, in the county of Middlesex, and in the State of Massachusetts, have invented certain new and useful Improvements in Vises; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to certain improvements in vises of that class known as "treadle vises;" and it consists in certain combinations and arrangements of the parts, as more fully hereinafter specified, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved vise; Fig. 2, a similar view with the side removed, showing the interior working parts of the vise; and Fig. 3 represents a plan view of the device. Fig. 4 shows a vertical sectional view of my improved device on the line *x x* of Fig. 2; Fig. 5, a horizontal sectional view of a modification of my device; and Fig. 6, a detached view in section on line *y y*, showing the combination of the parts whereby they are held in normal position.

The letter A designates the treadle, and B a rod connecting the treadle to a toggle-lever, C, inclosed in a casing, D, said toggle-lever being adapted to give the inner jaw a forward movement. The toggle is fastened to the casing D at G and to the inner jaw, H, at I by means of pins, the pins securing the end I passing through a slot in the casing. The jaw H is slotted and plays loosely over the casing D, and is provided with a shank which extends downward to the floor, where it works in a bearing, K, as indicated in Fig. 1 of the drawings.

The letter L indicates a pawl pivoted upon a pin, M. The pawl is provided with a projection, N, at its forward end and with teeth P at its rear, which are adapted to engage the ratchet on the shank of the outer jaw when the toggle-lever is depressed, so as to force the jaws together, the projection serving to release the pawl when the toggle-lever is elevated by means of the spring R. On the lower end of the shank of the inner jaw are formed a series of ratchet-teeth, S, with which the edge of the treadle A may be caused to engage in order to lock the jaws of the vise upon the work. The toggle is provided with arms T, bent at the ends, and adapted to engage the pins U on the pawl, in order that the pawl may be caused to engage the ratchet on the shank of the outer jaw. The rod B is provided with a rubber cushion or washer, V, to provide an elastic movement.

The operation of my invention is as follows: As the toggle-lever descends the spring is compressed and the inner jaw is thrown slightly forward, which permits the pawl to drop by its own weight into the rack attached to the outer jaw. This arrests the outer jaw, and as the toggle-lever still further descends the object between the jaws is clamped by the movement of the inner jaw, which is pressed forward with great force. When the treadle is released from the rack on the shank of the inner jaw the spring automatically elevates the toggle-lever, which pulls the inner jaw back, and this in turn lifts the pawl, which leaves the outer jaw and rack at liberty to slide freely.

As represented in the drawings, the vise is intended for metal-work; but it can be adapted to wood-work, for carpenters, wheelwrights, cabinet-makers, and others, by making the jaws straight and placing lugs on the top of the casing, so that it can be easily attached to the under side of the bench instead of the top, so as to be out of the way.

The casing, it is evident, will protect the working parts from injury, and from dust, chips, and other foreign substances which would tend to clog and interfere with their proper operation.

As shown in Fig. 2 of the drawings, the spring R sets in a socket in the enlarged part of one of the arms C of the toggle-lever. In the modification shown in Fig. 5 of the drawings the spring sets in a recess in the shell of the device, each arm of the bifurcated portion of the rod B being secured to a lug on one of the levers C, which is adapted to be brought to bear upon the spring when the rod B is depressed and be returned by said spring to normal position when released.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination with the jaws of the vise and the inclosing casing, the toggle-lever adapt-

ed to be operated as described, and the pawl adapted to engage a ratchet on the shank of the outer jaw when operated by the toggle-lever, substantially as set forth.

2. In combination with the jaws, the casing, the toggle-lever and its actuating devices, and the pawl, the spring for returning the parts to a normal position, substantially as and for the purposes set forth.

3. In combination with the treadle and connecting-rod, the rubber cushion V, the toggle-lever and spring, the bent arms, and the pawl provided with pins which the bent arms engage, and the jaw having a shank provided with a rack, the whole arranged to operate substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 6th day of April, 1882.

JOHN DENNIS.

Witnesses:
MARTIN L. HAMBLET,
J. NELSON DENNIS.