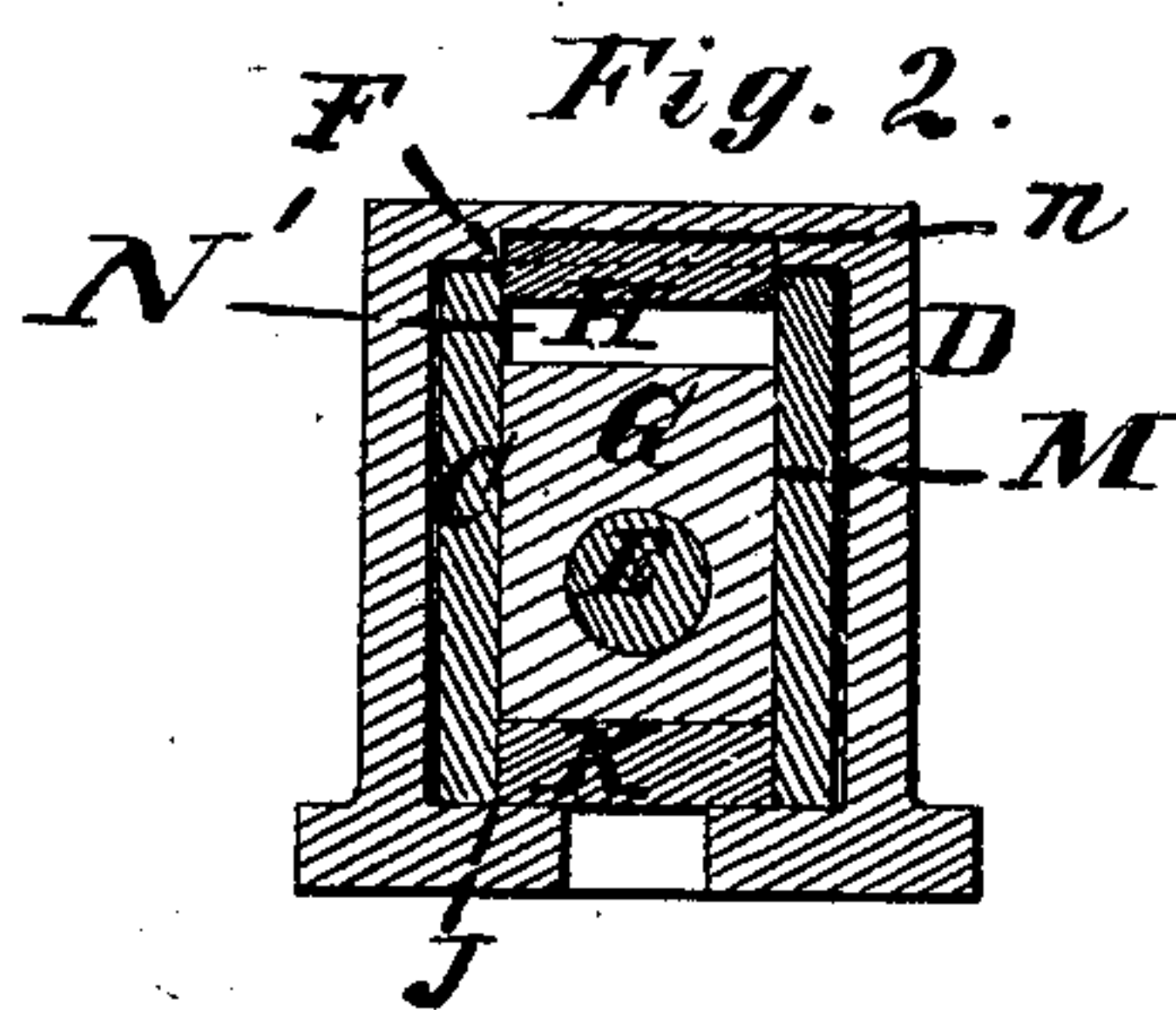
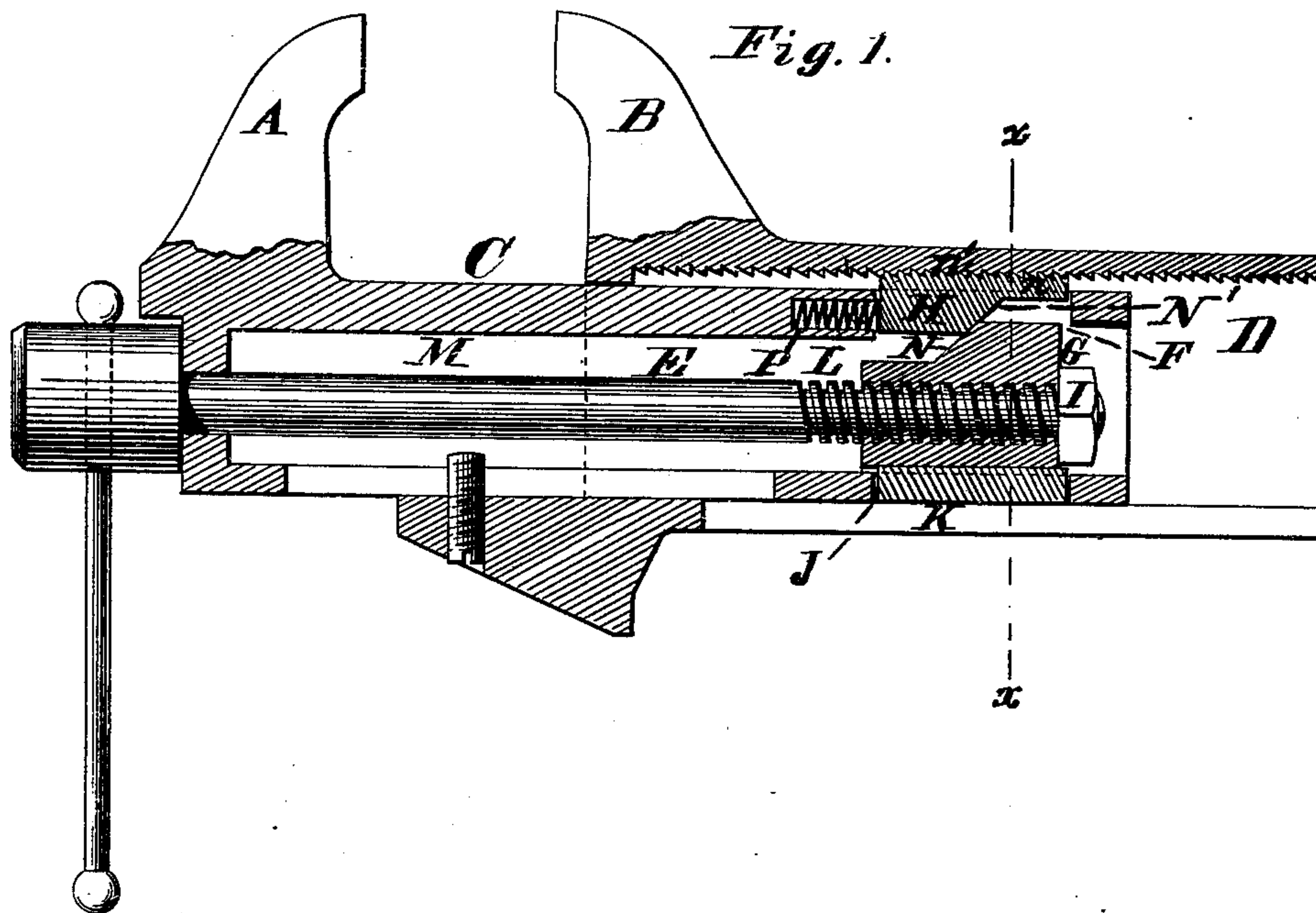


W. E. SNEDIKER.

**VISES.**

No. 188,688.

Patented March 20, 1877.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLIAM E. SNEDIKER, OF TRENTON, NEW JERSEY.

## IMPROVEMENT IN VISES.

Specification forming part of Letters Patent No. 188,688, dated March 20, 1877; application filed February 12, 1877.

*To all whom it may concern:*

Be it known that I, WILLIAM E. SNEDIKER, of Trenton, in the county of Mercer and State of New Jersey; have invented an Improvement in Vises; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification.

My invention is an improvement upon a vise Letters Patent for which were granted to John E. Sinclair, said patent bearing date November 1, 1870, and numbered 108,840.

In the invention of the said Sinclair a clamping piece or block, and a nut fitted to the screw of the vise are inclosed in a carriage which slides in the sheath, the upper part of the said clamping piece or block being notched to engage with notches formed on the inner side of the upper part of the sheath, the under side of said clamping-block being inclined or beveled to work on the inclined or beveled upper side of the nut, a separate carriage inclosing said nut and clamping-block, being attached to the inner end of the screw in such manner as not to turn with the screw, but to hold the said nut and clamping-block in relation with each other, and with the notched inner and upper part of the sheath, so that the first action of the screw in turning the same to clamp a piece of work in the vise would slide the inclined upper surface of the nut upon the inclined under surface of the clamping-block, causing the notches in the upper side of said clamping-block to engage the notches in the sheath, which, by such engagement, prevented the further movement of the nut, and caused the screw to press the movable jaw of the vise toward the fixed jaw. The opposite movement of the screw not only released the piece held in the vise, but slid back the said nut and carriage, which, releasing the said clamping-block from its engagement with the sheath, thus permitted the sword to be freely slid in or out of the sheath without turning the screw.

The object of my improvement is to dispense with the separate carriage for holding the said nut and clamping-block in proper relation with each other and the sheath, and thereby to enable the jaws of the vise to re-

ceive between them pieces of greater thickness than such vises of the same size could hitherto hold.

The invention partly consists in a peculiar construction of the inner end of the sword, and the arrangement therein of the nut on the screw and the clamping-block, in such manner that they will be held in proper relation and act to clamp the nut without the use of the separate carriage.

The invention further consists in the employment with the said nut and clamping-block, arranged as hereinafter described, of a supporting-block for the nut arranged in the bottom of the sword, as hereinafter described.

Figure 1 in the drawing represents a central vertical longitudinal section through a vise constructed according to my improvement. Fig. 2 is a vertical cross-section on the line *xx* in Fig. 1.

A represents the movable jaw of the vise, and B the fixed jaw of the same. C is the sword to which the jaw A is attached, and D is the sheath in which said sword slides. The said sword is preferably, but not necessarily, made rectangular in cross-section, as shown in Fig. 2, and it has a rectangular hollow, M, extending nearly its entire length. Near the inner end of said sword is formed an upper rectangular slot, F, and lower rectangular slot J.

E is the screw of the vise, which has the male screw-thread L, Fig. 1, formed thereon. Upon the threaded part of the screw E is fitted the nut G, which also, in its cross-section, corresponds to the cross-section of the sheath D. Upon the top of said nut is formed an inclined plane, N, Fig. 1. A set-nut, I, is screwed on a smaller thread at the end of the screw E.

H is the clamping-block, formed with notches *n* on its upper side to engage with notches *n'*, Fig. 1, in the sheath, and having the inclined plane N' on its under side. Said clamping-block is loosely fitted in the upper slot F of the sword C.

In a recess formed in the upper part of the sword, on the front side of the slot F, is placed a spring, P, Fig. 1, which acts against the front side of the block H, and which, while it has sufficient strength to force the inclined



plane N' up over the inclined plane N, does not bind the clamping-block H in the slot F, to prevent the free vertical movement of said clamping-block.

In the lower slot J of the sword C is loosely fitted the supporting-block K, upon which rests the nut G. Said supporting-block may be replaced whenever worn sufficiently to prevent its holding the parts in proper relation to insure the prompt and firm engagement of the notched clamping-block H with the notched sheath D. The sword might, however, be made without the slot J, and the supporting-block K might be omitted, without materially affecting the general principle and action of the invention, the nut G, in that case, resting upon the inner and under part of the sword itself; but this arrangement would render more expensive the replacement of parts to compensate for wear.

The operation of the vise is as follows: The first action of the screw E, when turned to clamp a piece in the jaws of the vise, is to draw the nut G toward the movable jaw A. The action of the inclined plane N on the inclined plane N' causes the clamping-block H to rise vertically, and thus bring its notches *n* into firm engagement with the notches *n'* of the sheath D. This done, the said nut, being held by the said clamping-block, can move no farther, and the further turning of the screw forces the jaws A and B toward each other.

When the screw is turned to release the piece from the jaws, the nut G is thrust backward, the clamping-block drops by its own gravity, its engagement with the sheath D ceases, and the sword C may then be drawn out or thrust into the sheath, within its intended limits, without using the screw E. A piece may thus be placed between the jaws, the movable jaw slid up against it, and a slight turning of the screw will suffice to fasten the piece in said jaws. It will be seen that by thus dispensing with the separate carriage for confining the nut G and clamping-block H, the sword C may be lengthened to include the space occupied by the separate carriage, and the holding capacity of the vise correspondingly increased.

I claim—

1. The combination of the screw E, nut G, having the inclined plane N, clamping-block H, having the inclined plane N' and notches *n*, the slotted sword C, and the notched sheath D, substantially as and for the purpose set forth.

2. The combination, with the screw E, nut G, clamping-block H, sword C, and sheath D, all constructed substantially as described, of the supporting-block K, arranged substantially as and for the purpose described.

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