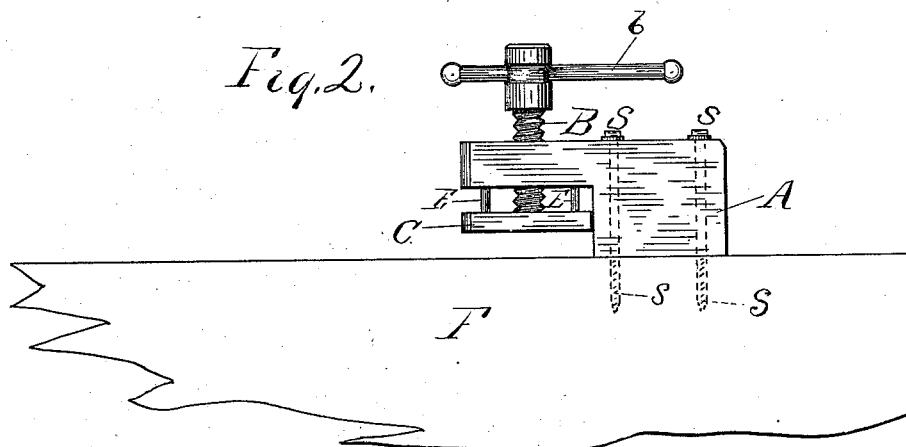
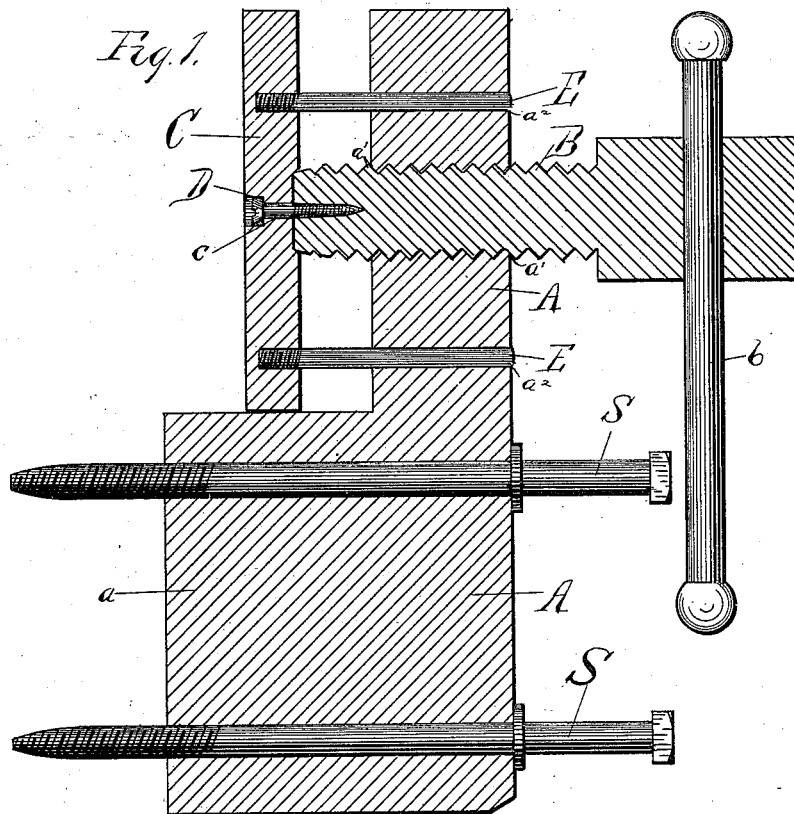


(No Model.)

H. LIEFER.
BENCH VISE.

No. 418,847.

Patented Jan. 7, 1890.



Witnesses
Harry Bitner.
Theodore Morris.

Inventor
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By His Attorneys
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UNITED STATES PATENT OFFICE.

HENRY LIEFER, OF HINSDALE, ILLINOIS.

BENCH-VISE.

SPECIFICATION forming part of Letters Patent No. 418,847, dated January 7, 1890.

Application filed March 21, 1889. Serial No. 304,157. (No model.)

To all whom it may concern:

Be it known that I, HENRY LIEFER, a citizen of the United States of America, residing at Hinsdale, in the county of Du Page and State of Illinois, have invented a certain new and Improved Bench-Vise, of which the following is a specification.

The object of my invention is, first, to arrange all of the working parts of a bench-vise in such a compact and convenient form that they may be combined in a single structure small enough to be carried about in the ordinary tool-box; second, to devise the simplest possible means for attaching such vise to any bench, box, or shelf at any desired point thereof, and, third, to make certain other improvements in the construction and mode of operation of such vises, to the end that the above requirements may be fulfilled without sacrificing any of the essential qualities of strength, durability, ease in working, and cheapness of manufacture.

My invention therefore consists in the improved devices and combinations thereof hereinafter described, all of which are clearly defined in the claim appended hereto.

The drawings present two views of my improved vise in its preferred form.

Figure 1 is a central horizontal section through the block or body of said vise and disclosing all of the parts thereof, and Fig. 2 shows said vise on a smaller scale attached to the side of the bench ready for use.

The body or support of the vise is the block A, bearing the shoulder *a*, the width of which is fixed by the limit to which the jaws of the vise are designed to separate. Through the portion of the block A which projects beyond the shoulder *a* a hole *a'* is bored and a screw B threaded therein. This screw is provided at the outer extremity with the handle *b* for turning it in the block A, and at the other end, which projects through the block A, a movable block C is so attached that it will follow the screw in its motion back and forth, but not be rotated thereby. This is done by means of a screw *c*, the head of which is countersunk in the block C, and when the latter is made of wood or similar material a washer D should be interposed between said head and the block C to prevent the wearing away of the latter.

The block C forms one of the jaws of the vise, and to retain it in proper position rods E are fastened into it and arranged to slide back and forth in holes *a''* in the block A, thus keeping the block C in the same relative position with the block A. These rods are, however, not fitted so tightly in the block A as to prevent the block C from adjusting itself to any slight variation in the surface against which it may be brought to bear.

To the parts already described it is necessary to add, to complete an operative vise, a firm support for the block A and to oppose a suitable abutment to the jaw C. A glance at Fig. 2 will show that these are readily furnished by any bench, box, shelf, or other structure that is capable of use as a work-bench. The block A is secured to the edge of such structure, which is lettered F, by means of screws S, and is preferably, though not necessarily, arranged in a horizontal position, as such position enables the shoulder *a* to assist the jaws of the vise in such operations as planing, where the force to be opposed is exerted in a horizontal direction.

In use the above-described vise possesses numerous and important advantages, among which perhaps the most noticeable are: first, its neat and compact form, which enables it to be carried about with an ordinary kit of tools; second, the ease with which it can be attached to or detached from any bench or other structure; third, the self-adjustment of the jaw C, which insures a firm grip, and also prevents any twisting strain upon the other parts of the vise when the surfaces against which the jaws bear are not exactly parallel, and, fourth, the fact that the jaw C can be replaced with but trifling expense whenever the bearing-surface of the same may become notched or uneven through use or abuse.

I claim as new and desire to secure by Letters Patent—

In a bench-vise, the combination of the supporting-block A, bearing the shoulder *a*, the block C, screw B, and rods E, as and for the purpose stated.

HENRY LIEFER.

Witnesses:

HARRY BITNER,
LEO HILL.