(No Model.)

# G. H. COLE.

## ADJUSTABLE BENCH VISE.

No. 437,572. Patented Sept. 30, 1890.

Fig. 1.

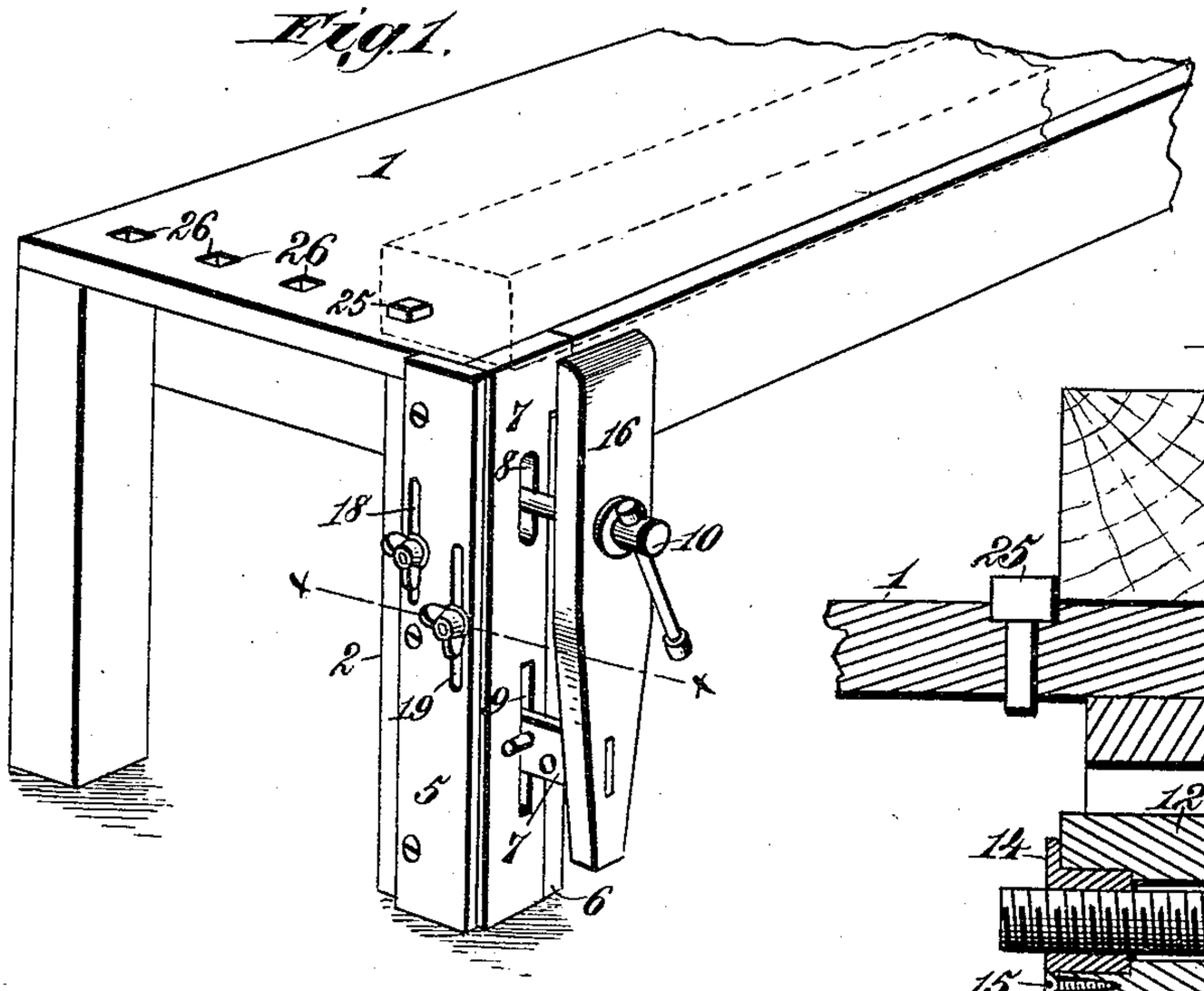



Fig. 2.

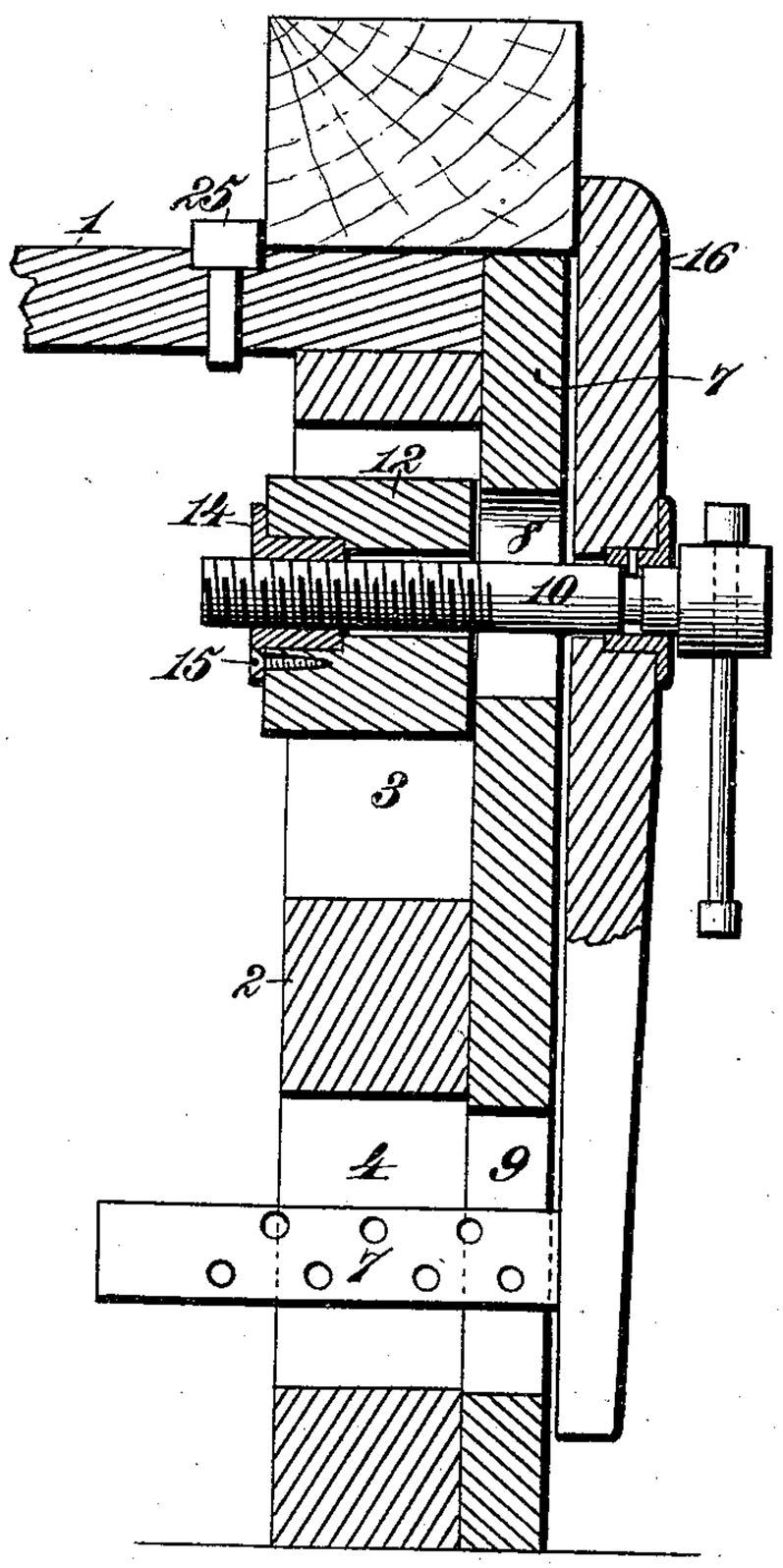



Fig. 3.

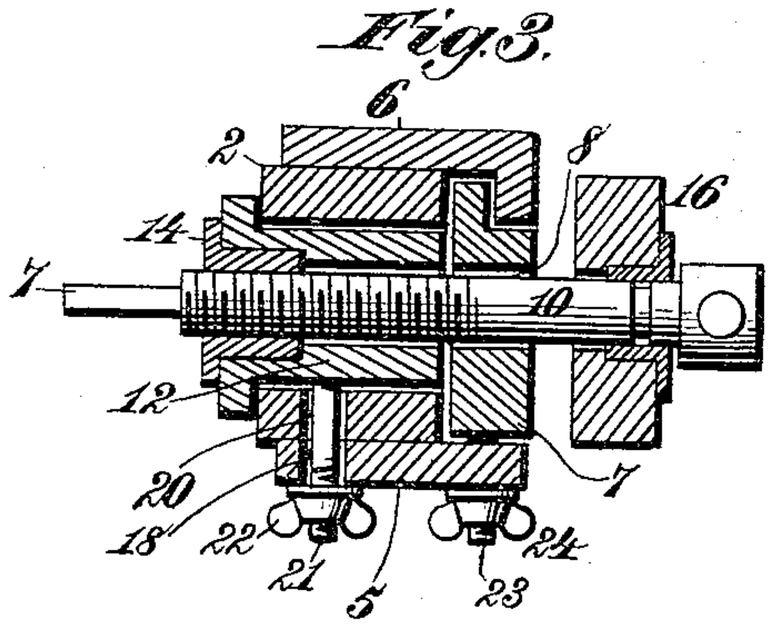
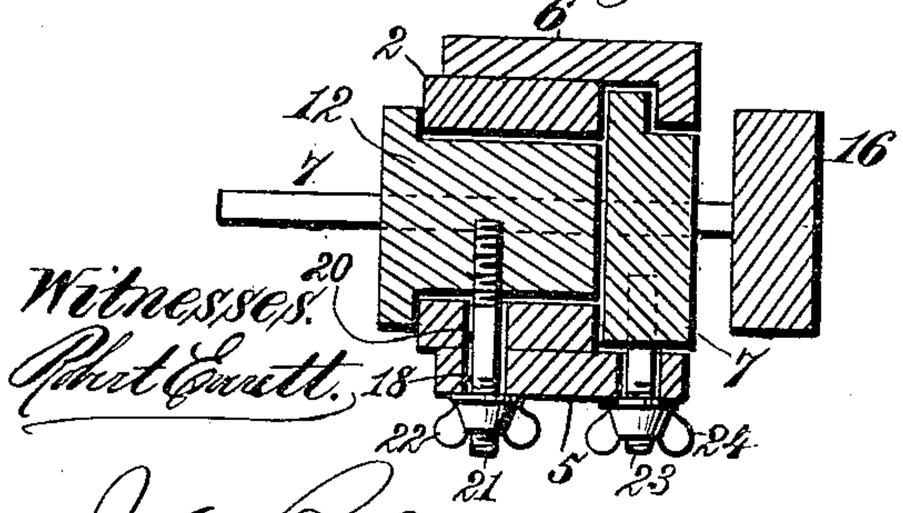



Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## ADJUSTABLE BENCH-VISE.

SPECIFICATION forming part of Letters Patent No. 437,572, dated September 30, 1890.

Application filed February 25, 1890. Serial No. 341,665. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. COLE, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented new and useful Improvements in Adjustable Bench-Vises, of which the following is a specification.

This invention relates to that type of vises wherein the jaws are adjustable to project more or less above the plane of a work-bench, as described and shown in my application for Letters Patent filed April 26, 1889, Serial No. 308,735.

The object of my present invention is to render the vise capable of more general use and adapted to wood-working where the prior construction could not be utilized. It is frequently a source of annoyance to a workman that small and irregular pieces of wood cannot be held in a vise while being planed, carved, or chiseled, thereby rendering it necessary to screw the piece to the bench. In other instances broad pieces of lumber are untrue on their faces, and as they are unsuitable for a vise and will not rest squarely and firmly on the bench the planing operation is difficult and tedious. Again, in planing long pieces of hard wood the ordinary bench-dog will not hold the work against sliding back with the plane, and therefore it is usual to nail the work to the bench. These objections I overcome by constructing the vise as hereinafter described, and pointed out in the claims, whereby the two jaws can be vertically adjusted in unison, while the outer clamp-jaw can be independently adjusted to project its upper end more or less above the inner jaw in such manner as to co-operate with a stop-pin or abutment on the work-bench to hold small and irregular pieces or grip the edges of wide lumber and long pieces of hard wood that rest upon the surface of the bench.

The invention is illustrated by the accompanying drawings, in which—

Figure 1 is a perspective view showing my improved vise applied to the corner portion of a work-bench. Fig. 2 is a vertical central sectional view of the same. Fig. 3 is a transverse sectional view taken on the axis of the adjusting-screw which operates the outer vise-jaw. Fig. 4 is a transverse sectional view taken on the line *x x*, Fig. 1.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings where the numeral 1 indicates a bench-top, and 2 a bench-leg, having upper and lower vertical slots 3 and 4, and a pair of vertical parallel guide-bars 5 and 6, one at each vertical edge of the leg and projecting outwardly therefrom. The inner vise-jaw 7 is located between the guide-bars, and is provided with upper and lower vertical slots 8 and 9, and through the upper slot 8 passes the adjusting-screw 10, which engages a screw-nut 12, adapted to rise and fall in the slot 3 of the bench-leg. The nut, as here shown, is composed of a block accurately fitting the side walls of the slot 3 and containing within its body an internally-screw-threaded tube 14, rigidly fastened to the block by screws 15 and engaging the adjusting-screw 10. The outer vise-jaw 16 is provided with a circular orifice through which the screw 10 loosely passes, as usual, and at the lower end the outer vise-jaw is provided with the usual guide 17, having perforations to receive a pin or other stop. The vertical guide-bar 5 is provided with a pair of vertical slots 18 and 19, arranged out of line and, preferably, one above the other, as clearly shown in Fig. 1, these slots being provided for the two independent clamps, which I will now specifically explain. The slot 18 coincides with a similar side slot 20 in the bench-leg, and through these slots passes a screw-rod 21, rigidly secured at its inner end to the sliding screw-nut and having on its outer projecting end a thumb-nut 22, adapted to bear against the outside of the guide-bar 5, or against an interposed washer. The other slot 19 in the guide-bar 5 is opposite one edge of the inner vise-jaw, and to the latter is rigidly fastened a screw-rod 23, which extends through the slot 19, and is provided on its outer end portion with a thumb-nut 24, adapted to also bear against the outside of the said guide-bar or against an interposed washer. These screw-rods and nuts constitute two independent clamps which serve the purpose of vertically adjusting both vise-jaws in unison and vertically adjusting the outer vise-jaw independent of the inner jaw. If the clamps be loosened by unscrewing the thumb-nuts, the two jaws can be raised to project

their upper ends more or less above the plane of the bench-top, and then by tightening up the thumb-nuts the sliding screw-nut and the inner vise-jaw will be rigidly clamped and held in their position. If, however, it is desired to adjust the outer vise-jaw vertically independent of the inner jaw, the thumb-nut 24 may or may not be tightened and the thumb-nut 22 loosened, whereupon the outer jaw alone can be raised, and in its upward movement it carries with it the adjusting-screw 10 and the screw-nut 12, the screw rising in the upper vertical slot 8 of the inner jaw, while the latter stands stationary. When the outer jaw has been raised the required distance, the thumb-nut 22 is tightened to clamp the screw-nut 12 in a fixed position. The last-described adjustment is exhibited in Figs. 1 and 2, where the outer vise-jaw is elevated, so that it can be then operated to and fro by the screw 10 to grip or release an object laid on the surface of the bench-top and made to rest against an abutment—such as a stop-pin 25, engaged with any one of a series of orifices 26, formed in or otherwise provided on the bench. By this means any article to be planed, carved, or chiseled can be laid on the bench and gripped at opposite edges between the upper end of the outer jaw and an abutment or stop-pin on the bench. The width of the piece to be worked may vary, and therefore the abutment or stop-pin should be adjustable, so that any piece can be held stationary even though it is approximately as wide as the bench. If a long piece of hard wood is to be planed, it can be laid on the bench and gripped and held stationary without nails, and, further, irregular and untrue pieces can be firmly retained while being worked.

I do not broadly claim herein the combination of the vertical parallel guide-bars, an inner vise-jaw guided by said bars, a screw extending through a slot in one of the bars and engaging the inner vise-jaw, and an outer vise-jaw having means to move it to and from the inner jaw, as such combination constitutes the subject-matter of my application hereinbefore mentioned.

Having thus described my invention, what I claim is—

1. A bench-vise consisting of two jaws vertically adjustable to project their upper ends more or less above the plane of the bench-top and the outer jaw movable vertically independent of the inner jaw to project its end alone above the plane of the bench, and means for holding both jaws elevated when the outer jaw is raised independent of the inner jaw, substantially as described.

2. A bench-vise consisting of two jaws vertically adjustable to project their upper ends more or less above the bench, the inner jaw having a vertical slot and the outer jaw movable upwardly independent of the inner jaw, a rising and falling screw-nut, a screw passing through the slot in the inner jaw, engaging the screw-nut and serving to move the outer jaw to and from the inner jaw, means for holding both jaws elevated, and means for holding the outer jaw elevated when moved upward independent of the inner jaw, substantially as described.

3. A bench-vise consisting of a rising and falling screw-nut, two jaws vertically adjustable to project their upper ends more or less above the bench, the inner jaw having a vertical slot and the outer jaw movable upwardly independent of the inner jaw, a screw passing through the slot in the inner jaw, engaging the screw-nut and serving to move the outer jaw to and from the inner jaw, a clamp for clamping the screw-nut in a fixed position, and a clamp for holding the inner jaw in a fixed position when elevated, substantially as described.

4. The combination of the parallel guide-bars, the rising and falling screw-nut, the two jaws vertically adjustable to project their upper ends more or less above the bench, the inner jaw having a vertical slot and the outer jaw movable upwardly independent of the inner jaw, a screw passing through the slot in the inner jaw, engaging the nut and serving to adjust the outer jaw to and from the inner jaw, a pair of screw-rods respectively engaging the screw-nut and the inner jaw, and a nut on each screw-rod, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

GEO. H. COLE.

Witnesses:
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C. P. TAYLOR.