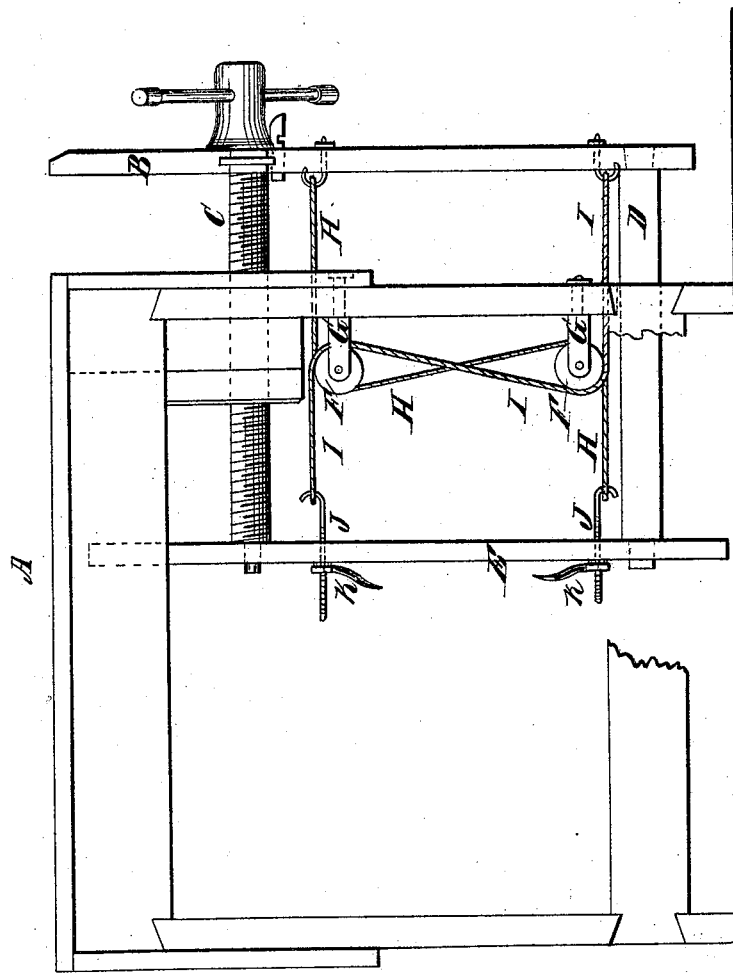


W. H. Cutter,

Bench Vise.

N^o 52,689.

Patented Feb. 20, 1866.



Witnesses:

Wm. Elyon
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WM. H. CUTTER, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN VISES FOR CARPENTERS' BENCHES.

Specification forming part of Letters Patent No. 52,689, dated February 20, 1866.

To all whom it may concern:

Be it known that I, WILLIAM H. CUTTER, of St. Louis, in the county of St. Louis and State of Missouri, have invented a new and useful Improvement in Bench-Vises; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The drawing, consisting of only one figure, represents a vise made according to my invention and applied to a work-bench.

This invention consists in a novel mode of making a parallel vise for a work-bench, wherein the movable jaw is attached near its lower end to a bar which is parallel with the screw which operates the vise, the inner end of said bar and the inner end of the screw being let into an upright bar which is parallel with the movable jaw. The upright bar is held up against shoulders formed on the first-named bar and on the screw by means of two chains or their equivalents, which connect the upright bar with the movable jaw.

A designates a work-bench, and B a movable jaw, operated by a screw, C, working through the front of the bench. The inner end of the screw is made smooth, and is let into an upright bar, E, so that it may turn therein, the bar being allowed to come up to a shoulder formed on the screw, against which shoulder it is held by a band or chain, as hereinafter explained.

To the lower end of the movable jaw B is fixed a bar, D, which extends through a slot in the front of the bench in a direction parallel with the screw.

The inner end of the bar D is jointed by a loose tenon-and-mortise joint to the lower end of the upright bar E, which comes up to and is held against a shoulder formed on the bar D by another band or chain, as hereinafter explained.

The upright bar E is sustained upon the ends of the screw B and bar D, having no other support, and is carried to and fro with them.

Upon the inside face of the front of the bench are brackets G G, one directly above

the other. The upper bracket is placed beneath the screw, but as near to it as can conveniently be done, while the lower one is placed above and near to the horizontal bar D. These brackets each carry a double-grooved pulley, F, over which are passed chains or bands H I, whose ends are fastened to the movable jaw and to the upright bar E.

The band or chain H is fastened to the inner side of the movable jaw at about the same elevation as that of the upper pulley, and is carried thence through the front of the bench over the upper pulley, thence down in front of and beneath the lower pulley, thence toward the upright bar E, to which it is connected by means of an adjustable eyebolt or hook, J, which passes through the bar.

The shank of the eyebolt has a screw-thread cut on it, and a nut and washer are placed thereon behind the bar, so that the bolt can be drawn whenever it is desired to tighten the band or chain H. The band or chain H runs in those grooves of the pulleys which are on the same side of said pulleys, and therefore in the same vertical plane. The band or chain is attached to the leg of the movable vise at a point opposite the lower pulley, and is taken thence under and around said pulley, thence upward in front of and around the upper pulley, running in the unoccupied grooves of said pulley, thence toward the upright bar E, with which it is connected, as in the case of the band or chain H, by an eyebolt or hook, J, whose screw-threaded shank passes through that bar, and is adjustable therein by means of a nut working on said shank. It will be observed from this construction that the movable vise, the bar E, the screw, and the bar D form a parallelogram, and that they are all moved together by means of the rotation of the screw G, and that their parallelism is secured by means of the manner in which they are arranged and connected together, and also by means of the bands or chains H I, the band or chain H being connected to the upper part of the vise and to the lower part of the upright parallel bar E, and the band or chain I being connected to the lower part of the vise and to the upper part of said bar, so that the motion of the vise is communicated with exactness to the bar E. The said bar E is held in its place

in the body or frame, made as above described, by the bands or chains and eyebolts or hooks and their nuts, and any unevenness or sagging of the parts can be compensated by drawing up or letting out one of said bands or chains.

My improvement can be readily applied to an old bench-vise, and the several parts of the vise can be made of any suitable material.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

A parallel vise for work-benches constructed and arranged substantially as above described.

WILLIAM H. CUTTER.

Witnesses:

E. C. DAVIS,

JOSEPH DICKSON.