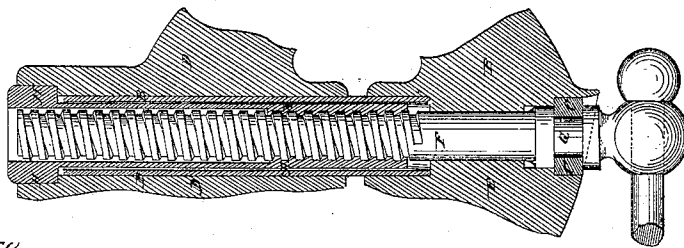
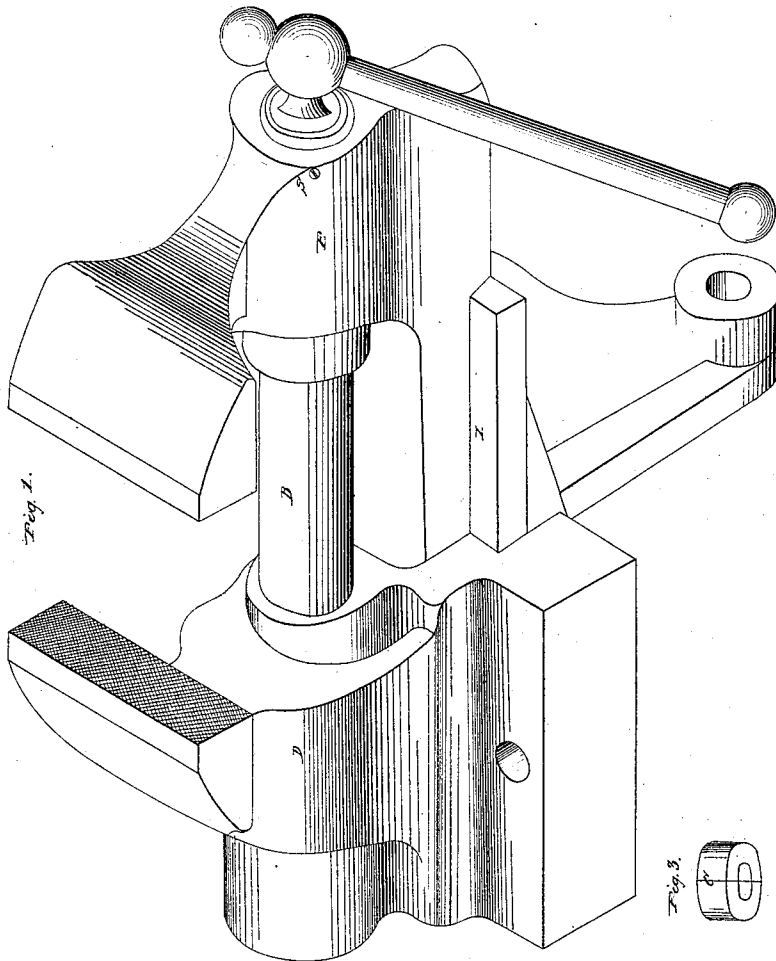


S. S. Henworth,

Vise.

N^o 53,821.

Patented Apr. 10, 1866.



Witnesses.

*D. Barnes
J. H. Humphreys*

Inventor.

S. S. Henworth

UNITED STATES PATENT OFFICE.

S. S. HEPWORTH, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SMITHS' VISES.

Specification forming part of Letters Patent No. 53,821, dated April 10, 1866.

To all whom it may concern:

Be it known that I, S. S. HEPWORTH, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Vise; 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.

Figure 1 is a perspective view of the improved vise. Fig. 2 is a vertical section through the screw F, showing the improvement. Fig. 3 is a perspective view of the bushing C, in which the screw revolves and by which it is secured to either movable or fixed part of the vise. This bushing may be made in one or more pieces. If it is made in one piece, the collar or projection *m* must be made separate from the screw, and after the bushing is slipped on the collar may be secured either by shrinking or by pinning it to the screw.

The nature of my invention consists in providing the screw F with a covering or casing of pipe, B, attached to either movable or fixed part of the vise, and in the manner of attaching the nut A to either fixed or movable part of the vise by means of the collar H, so that the pipe B can pass over it when the vise is shut; also, in the peculiar manner of attaching the screw F to either movable or fixed part of the vise by means of a bushing, C, made in one or more parts and fitting into the groove G in the shank of the screw F. This bushing is firmly held in its place by means of the set-screw S or some similar device.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The jaws of the vise and the slide I may be of ordinary construction. The screw F differs from the usual form in being provided with the groove G for the reception of the bushing C, which may be turned into the shank or formed by projections, substantially as shown in the drawings. This screw is inserted into its place with the bushing C fitted and placed upon it. The bushing is then secured in its place by the set-screw S, which retains the screw in its position, but allows it to revolve freely.

The tube B is inserted into either the movable or fixed part of the vise a sufficient distance to hold it firmly, and is retained in its place by a pin or some other common device.

The nut A is of an elongated form, as shown in the drawings, and is provided with the collar H, which is firmly fitted into a recess at the back end of the vise. This collar is of larger diameter than the rest of nut, so that the tube B can slide on the nut as far back as the collar. The nut and collar may be made in one or more pieces, as is most convenient.

When the vise is in use the tube B slides in and out on the nut A and shields the screw from filings or anything that might interfere with its proper action.

I claim—

The sleeve B, in combination with the nut A, connected to the movable jaw E, operating as and for the purpose described.

S. S. HEPWORTH.

Witnesses:

D. E. SOMES,
WM. HENRY PRINCE.