(No Model.)

W. H. REYHER.

VISE.

No. 345,990. Patented July 20, 1886.

Fig. 1.

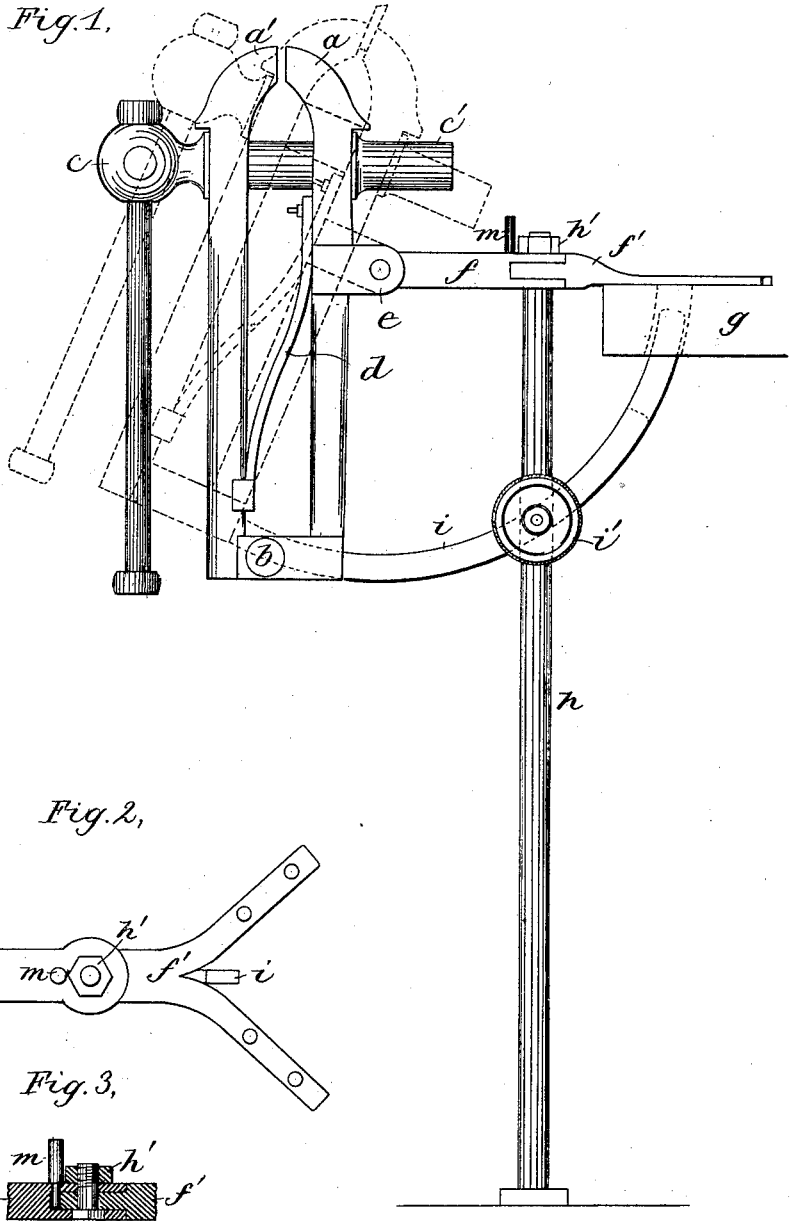


Fig. 2.

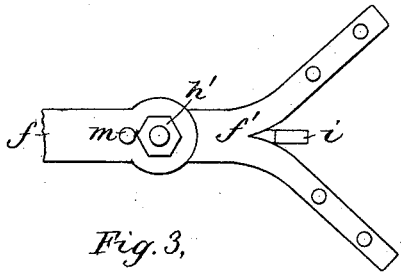


Fig. 3.

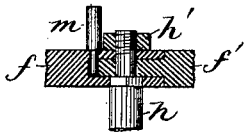
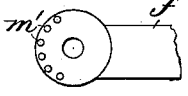


Fig. 4.



Witnesses,
J. J. Mooney
L. P. Bates

Inventor,
William H. Reyher
by Jas. P. Livermore
Att'y.

UNITED STATES PATENT OFFICE.

WILLIAM H. REYHER, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO CHARLES E. COLLMER, OF SAME PLACE.

VISE.

SPECIFICATION forming part of Letters Patent No. 345,990, dated July 20, 1886.

Application filed October 12, 1885. Serial No. 179,611. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. REYHER, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Vises, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The object of this invention is to render a vise more convenient for workmen in filing or otherwise operating upon pieces held by the vise. To accomplish this object the vise is pivoted upon its support, so that it can be turned and fastened in a position with the faces of the jaws at any desired inclination to the vertical plane, thus enabling a beveled surface on the piece held by the vise to be brought to a substantially horizontal position while being operated upon by the workman. The vise is preferably, also, capable of being turned in a horizontal plane, so that the jaws may be held at any desired angle to the bench or support upon which the vise is fastened.

Vises have been made which turn in a horizontal plane, and also which turn in a vertical plane parallel with the faces of the jaws, for the purpose of affording greater convenience in operating upon the material held by the vise; but neither of these movements enables the faces of the jaws, and consequently the sides of the material held between them, to be adjusted at an inclination to the vertical plane, and when it is necessary to hold a piece in such a manner it has been necessary in vises, as heretofore made, to provide the jaws with a beveled or chamfering attachment, which is inconvenient, and also occupies the greater part of the space between the jaws, so that only comparatively thin pieces can be held with their sides in an inclined position, while by the present invention pieces of any size that can be received between the jaws of the vise may be held thereby at any desired inclination to the vertical plane.

Figure 1 is a side elevation of a vise embodying this invention, shown in full lines in the position in which vises of this class are usually fixed, and in dotted lines in an inclined position, to facilitate operating upon a beveled surface; Fig. 2, a plan view of a portion of the support for the vise, and Figs. 3 and 4 details to be referred to.

The vise proper may be of any suitable or usual construction, comprising jaws *a a'*, shown as having long shanks pivoted together at *b* and operated by a screw, *c*, working through openings in the shanks of the jaw *a* and in a socket, *c'*, bearing on or connected with the jaw *a'* in the usual manner, the jaws being separated, when the screw *c* is turned outward from its socket, by a spring, *d*. The jaw *a*, which will, for convenience, be called the "fixed jaw," is pivotally connected at *e* with an arm, *f f'*, the portion *f'* of which is adapted to be rigidly fastened upon the bench or other support *g*, the said arm being preferably also sustained by an upright, *h*, extending down to the floor below the bench. The vise may thus be turned in the vertical plane at right angles to that of the faces of the jaws, so that the co-operating faces of the jaws are at any desired angle to the vertical plane, thus enabling the piece of metal or other material held in the jaws, as shown in the dotted-line position, to have its edge beveled by a file or other tool working in a substantially horizontal plane.

In order to fasten the vise securely when set at the desired inclination, it is provided with a sector, *i*, working in an opening in the upright *h*, and also in an opening in the bench, if necessary, the said sector being fixed, when the vise is in the desired position, by means of a clamping device, *i'*.

The arm *f f'* is shown as made in two parts hinged together at their junction with the upright *h*, the joint being shown in section in Fig. 3, thus enabling the vise to be turned in a horizontal plane, if desired, to vary the angle between the jaws and the front edge of the bench, the vise being first turned back a short distance in the vertical plane, so as to disengage the end of the sector *i* from its opening through the bench, the under portion of which may be grooved, if necessary, to permit the horizontal swiveling of the said sector. When thus turned in the horizontal plane, the vise may be made fast, either by tightening the nut *h'*, which fastens the upright *h* to the arm *f f'*, or, preferably, by means of a pin, *m*, passing through an opening in one member of the joint between

the arms $f f'$ and into any desired one of a series of openings, m', in the other member of the said joint (Shown in Fig. 4.)

The vise is held by the arm $f f'$ at some distance from the bench, so that the swiveling in the horizontal plane will in many cases not be necessary or desirable, and when such is the case the arm $f f'$ may be made in a single piece or forging, and the rod h may also, if desirable, be welded to or made in a single piece with the said arm.

I claim—

1. The combination of the jaws and jaw-operating mechanism of a vise with a supporting-arm having a pivotal connection with the said jaws, and a sector connected with the vise and in the plane at right angles to that of the faces of the jaws, and clamping device by which the said vise is fastened with the faces of its jaws at any desired angle to the vertical, substantially as described.

2. The vise supporting arm adapted to be fastened upon a bench and upright extending therefrom to the floor, combined with the vise pivoted upon the said arm and a fastening-sector connected with the vise and working in the said upright, substantially as described.

3. The vise-supporting arm consisting of a stationary portion and a portion hinged to turn thereon in a horizontal plane and the upright extending from the joint in the said arm, combined with the vise supported upon the pivoted portion of the said arm, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. REYHER.

Witnesses:

JOS. P. LIVERMORE,

H. P. BATES.