

(No Model.)

H. SCHWARZ.
VISE.

No. 537,649.

Patented Apr. 16, 1895.

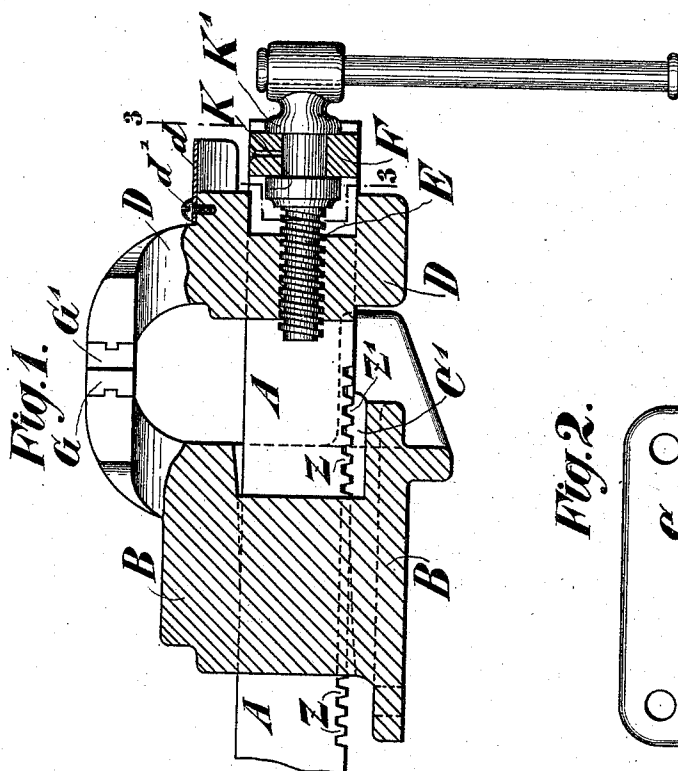


Fig. 2.

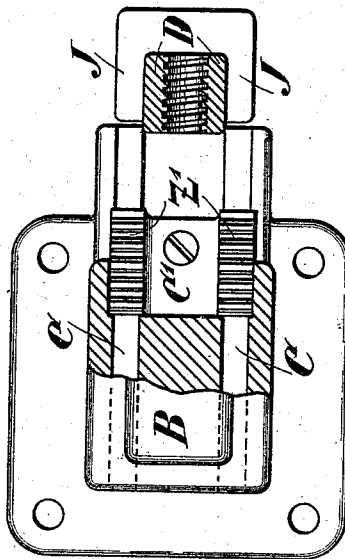


Fig. 3.

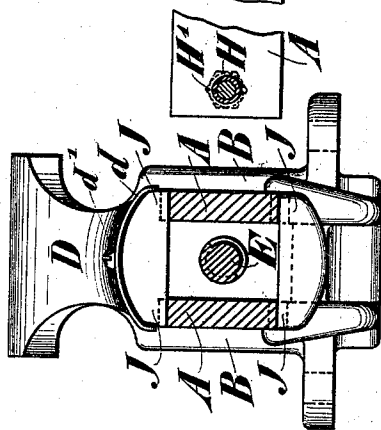
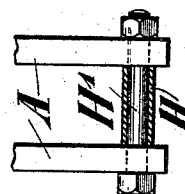


Fig. 4.



Witnesses:

Geo. L. Wheelock
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Inventor:

Hans Schwarz.
By *Charles R. Rogers*
his Attorneys.

UNITED STATES PATENT OFFICE.

HANS SCHWARZ, OF BASSERDORF, SWITZERLAND.

WISE.

SPECIFICATION forming part of Letters Patent No. 537,649, dated April 16, 1895.

Application filed August 17, 1894. Serial No. 520,626. (No model.) Patented in Switzerland January 18, 1893, No. 6,130; in Germany April 26, 1893, No. 75,807, and in Austria-Hungary October 30, 1893, No. 27,254 and No. 50,765.

To all whom it may concern:

Be it known that I, HANS SCHWARZ, a citizen of the Republic of Switzerland, residing in Basserdorf, Switzerland, have invented certain new and useful Improvements in Vises, (for which I have obtained patents in Switzerland, numbered 6,130, dated January 18, 1893; in Germany, numbered 75,807, dated April 26, 1893, and in Austria-Hungary, numbered 27,254 and 50,765, dated October 30, 1893,) of which the following is a specification.

This invention relates to a parallel clamp-vise, and has for its object a construction which enables the piece of work to be very rapidly and easily clamped.

My invention consists of two clamping-jaws, the fixed support for one jaw having two guide-ways, which receive two racks that are adapted to engage by means of their teeth some teeth at the bottom of the guide-ways, and the support for the other jaw receiving the screw-spindle that turns within but cannot move longitudinally of the cross-piece connecting the racks, so that by revolving the operating handle the spindle is rotated and the movable jaw moved, said fixed support being constructed so as to permit the racks to be tilted so that the teeth may be disengaged and the movable support and its jaw permitted to be rapidly shifted; and my invention consists of certain details of construction and combinations of parts to be hereinafter described and then claimed.

In the accompanying drawings:—Figure 1 is a vertical longitudinal section of my improved clamp-vise. Fig. 2 is a broken horizontal view, with the racks, spindle and operating-handle removed. Fig. 3 is a section on line 3—3, of Fig. 1, partly in elevation, and Fig. 4 is a detail rear plan view of the racks.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, G, G', indicate the two clamping jaws of my improved vise, said jaws being mounted respectively upon a fixed support B and a movable support D. The fixed support B is provided with two horizontal guide-ways C, C, which receive a pair of racks A, A, said racks being parallel to each other and connected at their rear ends

by means of a pin or bolt H upon which is placed a spacing sleeve H' which is located between the racks and separates them the required distance apart.

The movable support D is provided with a screw-threaded bore *e* which receives an exteriorly screw-threaded spindle E, which is secured to a cross-bar F connecting the front ends of the racks A (so as to prevent longitudinal movement of the spindle) by means of an annular shoulder K' formed on the spindle, and by an adjustable ring K which engage the opposite faces of said cross-bar. The spindle E is provided at its outer end with a handle J which when turned moves the support D and its jaw G'.

For securing the firm connection of the racks A with the fixed support B the teeth Z of the racks are adapted to engage the teeth Z' of a plate C' which is secured to the support B at the forward ends of the guide-ways C, C in line with their lower surfaces. The rear ends of the lower surfaces of the guide-ways are inclined at C², while the forward ends of the upper surfaces of said guide-ways are inclined at C³ so that the ends of the guide-ways are enlarged and the racks A are permitted to be tilted in the guide-ways so that the teeth Z thereof, can be disengaged from the fixed teeth Z' and the shifting of the racks A, A, may be accomplished without interference by said teeth.

d is a guard-plate which is fixed to the upper side of the movable support D by means of a screw *d'* so as to extend over the space between the support and the cross-bar F.

It will be observed from the foregoing that if a piece of work is to be clamped in the vise, the racks A may be tilted upwardly and the movable jaw G' rapidly moved away from the fixed jaw G, so that said jaws are sufficiently separated to permit the introduction of the piece of work and then the racks A, A, with the movable jaw G' may be quickly moved back so that the piece of work is lightly held between the movable and the fixed jaws, said movable jaw having been dropped so as to cause the teeth Z to engage with the teeth Z' and accomplish the locking of the racks to the support B. The handle J is now turned so as to move the movable sup-

port along the racks A, A, said support being guided by means of shoulders I, I, at the top and bottom of the same which engage the lower edges of said racks, and thereby the
 5 firm clamping of the piece of work between the two jaws is accomplished.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

- 10 1. In a vise, the combination with a fixed support provided with a jaw, and having two parallel guide-ways enlarged at the ends, of a pair of racks received by said guide-ways, a movable support guided by said racks and
 15 provided with a jaw adapted to coact with the aforesaid jaw, the said movable support having a screw-threaded bore, a screw-threaded spindle engaging in the screw-threaded bore of said movable support and turning
 20 within a connecting cross-piece of the racks, means for rotating said spindle, and means for locking the racks to the fixed support, substantially as set forth.

2. In a vise, the combination with a fixed

support provided with a jaw and having parallel guide-ways extending therethrough, said guide-ways being enlarged at their forward ends, of a pair of racks received by said guide-ways and connected at their forward ends by a cross-piece, a movable support provided with
 30 a jaw and guided upon the forward ends of said racks and behind the cross-piece, said movable jaw coacting with said fixed jaw, a screw-threaded spindle turning in said cross-piece and engaging a screw-threaded bore in
 35 the movable support, a handle for revolving said spindle, and teeth respectively on said rack, and on said fixed support, said teeth being adapted to engage and lock the racks to the fixed support, substantially as set forth. 40

In testimony whereof I hereunto sign my name, in the presence of two subscribing witnesses, this 28th day of July, 1894.

HANS SCHWARZ.

Witnesses:

MORITZ VEITH,
 E. BLANC.