(No Model.) 3 Sheets—Sheet 1.

R. W. KENYON.

VISE.

No. 457,353. Patented Aug. 11, 1891.

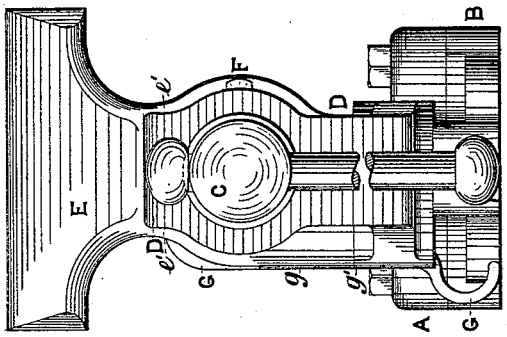

FIG: 2.

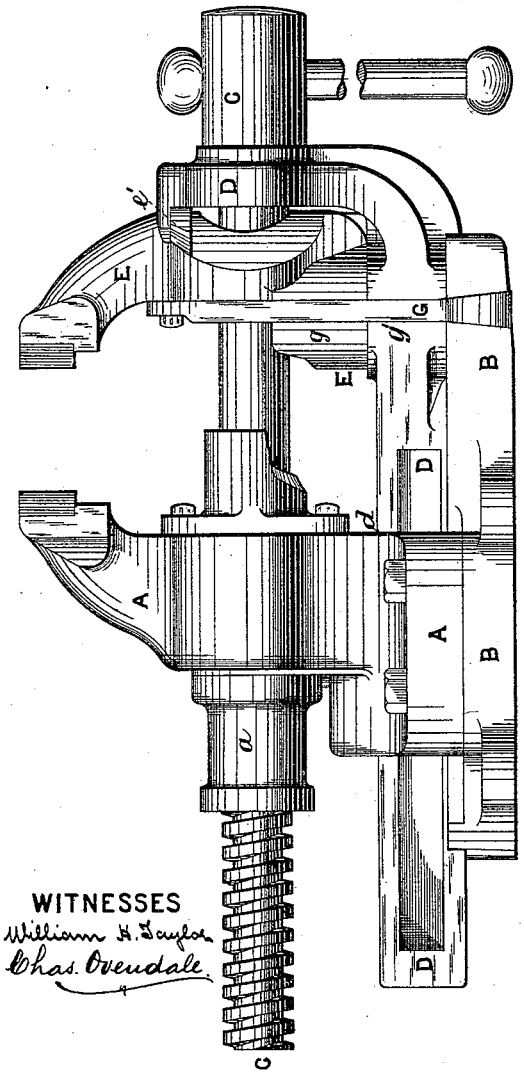

FIG: 1.

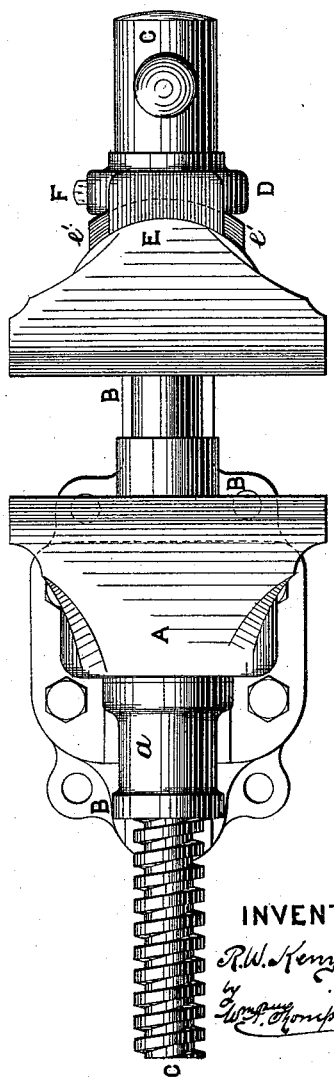

FIG: 3.

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(No Model.) 3 Sheets—Sheet 2.

R. W. KENYON.

VISE.

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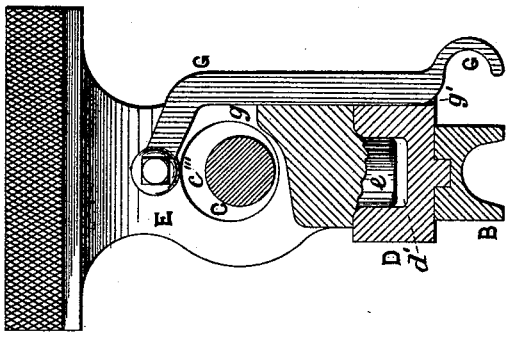

FIG: 5.

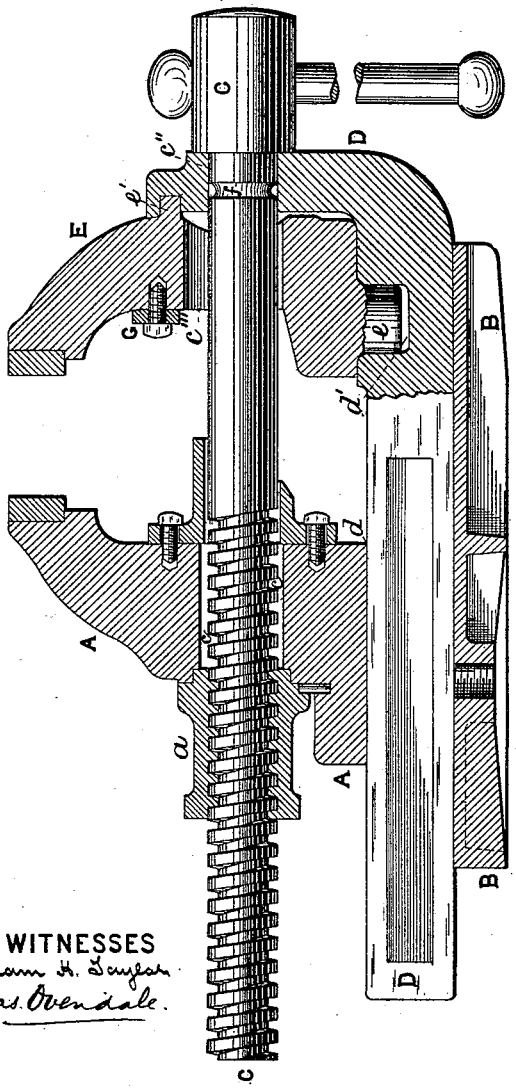

FIG: 4.

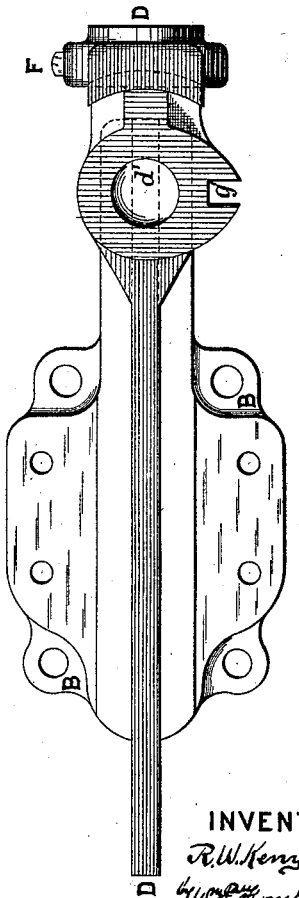

FIG: 6.

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(No Model.) 3 Sheets—Sheet 3.

R. W. KENYON.

VISE.

No. 457,353. Patented Aug. 11, 1891.

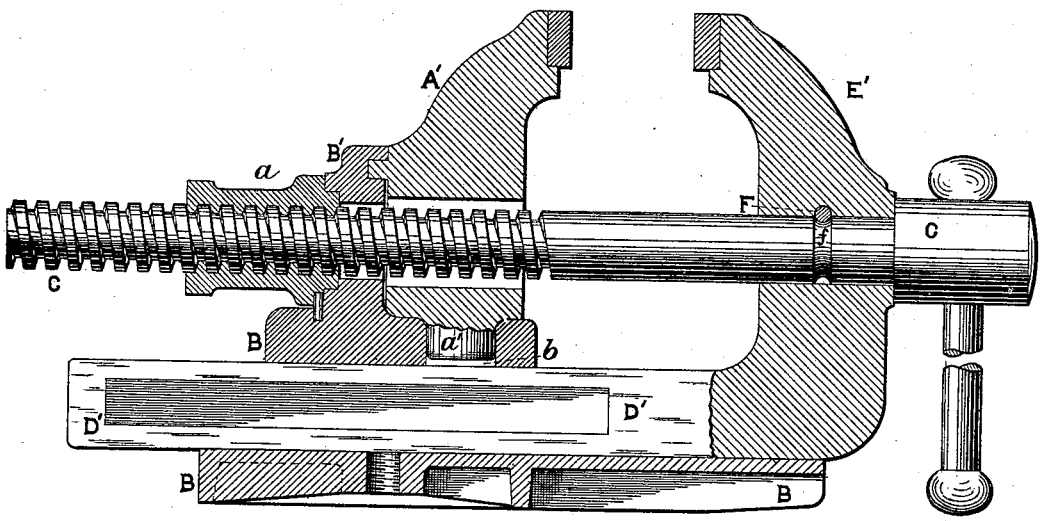

FIG. 7.

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UNITED STATES PATENT OFFICE.

RICHARD WALTON KENYON, OF ACCRINGTON, ENGLAND.

VISE.

SPECIFICATION forming part of Letters Patent No. 457,353, dated August 11, 1891.

Application filed March 16, 1891. Serial No. 385,207. (No model.) Patented in England March 20, 1890, No. 4,401.

To all whom it may concern:

Be it known that I, RICHARD WALTON KENYON, a subject of the Queen of Great Britain, residing at Accrington, in the county of Lancaster, England, have invented certain new and useful Improvements in Vises, (for which Letters Patent have been obtained in Great Britain, No. 4,401, bearing date March 20, 1890,) of which the following is a specification.

This invention relates chiefly to that class of vise known as a "parallel vise," but may also, in part, be applied or adapted to bench-vises of the ordinary type, and is designed with the object of providing a vise with one or both jaws capable of swiveling or turning about a vertical axis.

It consists, essentially, in constructing the vise with one jaw (preferably the front jaw) pivoted at or near the base in a supporting-slide or base-plate, with a central elongated or slotted hole through which the tightening-screw passes, and having a supporting piece or bracket against which the tightening-screw engages, and a pin, finger, or catch to retain the jaw in a square or straight position when required. It will be fully described with reference to the accompanying drawings, in which, as an example, is shown a parallel vise with one jaw made to turn or swivel.

Figure 1 is a side elevation; Fig. 2, an end elevation; Fig. 3, a plan; Fig. 4, a sectional elevation; Fig. 5, a transverse sectional elevation of swiveling jaw; Fig. 6, a plan of base-plate and sliding bar, with jaws removed; Fig. 7, a sectional elevation showing the invention applied to the back jaw.

In Figs. 1 to 6 the back jaw A of the vise is constructed of ordinary form with a bracket or base-plate B, by which it is affixed to the bench, and with the usual holes or openings *c* and *d*, through one of which the tightening-screw C passes and through the other the sliding bar D, which carries or supports the front jaw E. The bar D is preferably of L shape and is provided in its lower member with a socket *d'* to receive a pin or pivot *e* on the bottom of the jaw E, and the other member stands up against the back of the jaw E and supports it.

The top part of the jaw E is made of the ordinary shape, and upon its lower end is formed a pivot or stud *e*, which fits into the socket *d'* in the sliding bar D. The back of the jaw E where it comes in contact with the sliding bar D is turned or formed to the arc of a circle and fitted to rest against the upper member of the bar. It is also provided with a lug or tongue *e'*, which fits into a groove formed in the upright part of the bar D. By this means the greater part of the strain is thrown upon the sliding bar, which is preferably made of steel. Instead of the socket *d'* being formed in the sliding bar D and the pivot *e* upon the movable jaw E, the socket may be formed in the jaw and the pivot upon the bar, and similarly the tongue *e'* may be formed on the arm D to fit into a groove in the jaw.

The tightening-screw C passes through the upright member of the sliding bar D and through the pivoted or swiveling jaw E into the hole *c* in the fixed jaw A. To the back of the fixed jaw is attached a screwed sleeve or nut *a*, with which the threads of the screw C engage. The spindle of the screw C has a close fit in the hole *c''* in the bar D, and is held therein by a pin or screw F in a groove *f*; but in the hole *c'''* in the movable jaw E the spindle passes loosely through, the hole being made of oval shape toward the back to allow of the turning or swiveling of the jaw. The head of the screw C bears against the upright member of the bar D, and the turning of the screw moves it either in or out, the jaw E being carried with it.

The bar D may, if desired, be made straight or flat, in which case the socket in which the jaw is pivoted is placed near the end or within a short distance thereof, and the head, or preferably a collar placed upon the spindle of the tightening-screw, bears directly against the back of the jaw, the collar being formed concave on that side to correspond with the curved or convex surface at the back of the jaw.

The pivoted jaw is provided with a pin or catch which engages with a slot or hole in the sliding bar to retain the jaw, when required, square or parallel with the fixed jaw. The form I prefer is a pivoted catch G, which falls into a slot or groove *g*, cut in the pivoted jaw E, and a similar groove *g'*, cut in the sliding bar D, through a lug in each, with a pin-hole through which a pin is passed or

a catch pivoted at or near the top of the jaw, which will engage with a lug on the sliding bar or a catch on the top of the bar engaging with the jaw, or other similar arrangement may be employed.

In Fig. 7 (which is a longitudinal sectional elevation) the invention is shown applied to the back jaw of a vise. In this case the jaw A′ is provided with a pivot a', which fits into a socket b in the base-plate B in a manner similar to that already described with reference to the other jaw, and the sliding bar D′ and the jaw E′ will be made in one piece in the ordinary way. The tightening-screw C passes through the center of the jaw, and the nut a to receive the tightening-screw may bear against the back of the jaw A′; but it is preferably formed as part of or is made to bear against an upright fixed bracket B′, with which the jaw comes in contact in the manner herein shown with reference to the jaw E and upright member of bar D.

In an ordinary bench-vise with hinged front jaw the back jaw may be caused to swivel and be fitted to a base-plate, as above described with reference to Fig. 7.

By constructing vises as described with a swiveling jaw a tapered or inclined piece of work can be firmly gripped therein, with equal pressure extending throughout the length of the jaws, while at the same time no undue strain or pressure is put upon the pivot or socket on which the jaw swivels.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A vise having one jaw pivoted at or near the bottom in a supporting-plate, with an elongated or slotted hole through which the tightening-screw passes, the pivoted jaw being supported above its pivot by the tightening-screw, or by a bracket against which the screw bears, substantially as described.

2. A parallel vise having a fixed jaw A and base-plate B, a sliding bar D, with or without the upright supporting member which carries the second jaw, and a jaw E, through which the tightening-screw passes, pivoted thereto by pivot e in a socket d', substantially as described.

3. In a vise, the combination, with a fixed jaw and a pivoted jaw, of the base-plate B and sliding bar D, substantially as described.

4. In a vice, the combination, with the fixed jaw A and base-plate B, of the movable jaw E, with a pivot below the tightening-screw, and the sliding bar D, provided with a socket into which the pivot of the movable jaw fits, substantially as described.

5. A vise provided with two jaws, one of which is pivoted and capable of turning about its vertical axis, the pivot being placed below the tightening-screw, substantially as described.

6. A swiveling vise-jaw formed with a central hole through which the tightening-screw passes, and a pivot at its lower edge below the tightening-screw, substantially as described.

7. A swiveling vise-jaw formed with a central hole beveled out at the back to an oval form to allow of the jaw moving about its vertical axis without removing the screw, substantially as described.

8. In a vise, the combination, with the base-plate B and jaw A, of the screwed sleeve a, substantially as described.

9. In a vise, the combination, with the base-plate B, sliding bar D′, and sliding jaw E′, of the pivoted jaw A′, pivot a', socket b, and upright fixed bracket B′, substantially as described.

10. In a vise, the combination, with the fixed jaw A, base-plate B, and screwed sleeve a, of the jaw E, with pivot at its lower end, sliding bar D, tightening-screw C, and set-screw or pin F.

11. In a vise, the combination, with the pivoted jaw, of the catch G, substantially as described.

12. In a vise, the combination, with the sliding bar D, provided with a socket, of the jaw E, with a pivot at its lower end, and the pivoted catch G, substantially as described.

13. A swiveling vise-jaw formed with a central hole c''' to receive the tightening-screw, a pivot e on the bottom, upon which it turns about its vertical axis, and a tongue e' at the back, which slides in a groove and by which it is supported, substantially as described.

14. In a vise, the combination of a fast jaw, a loose jaw swiveling on a pivot below the tightening-screw, a base-plate, a sliding bar to carry one jaw backward and forward, and a tightening-screw, substantially as described.

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

RICHARD WALTON KENYON.

Witnesses:

J. OWDEN O'BRIEN,

CHAS. OVENDALE.