No. 776,126. PATENTED NOV. 29, 1904.

C. A. EDLUND.

VISE.

APPLICATION FILED DEC. 28, 1903.

NO MODEL.

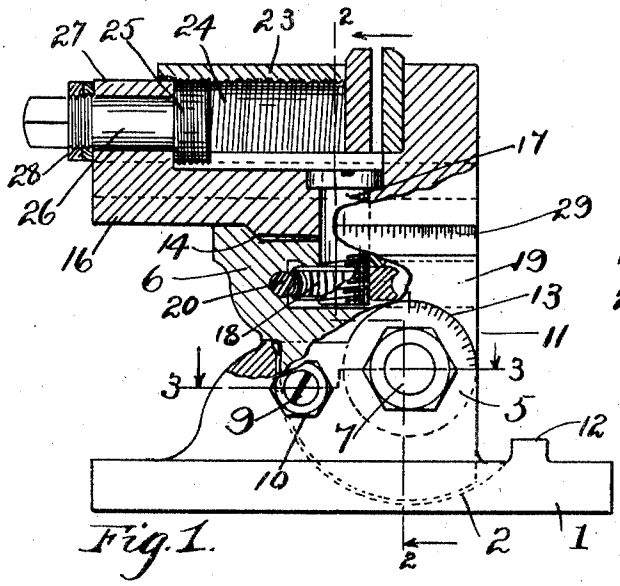


Fig. 1.

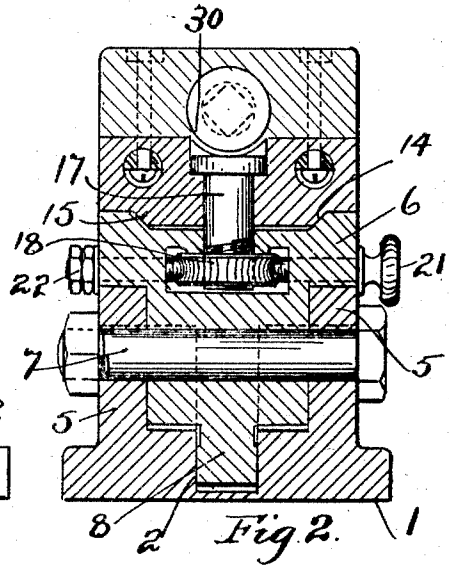


Fig. 2.

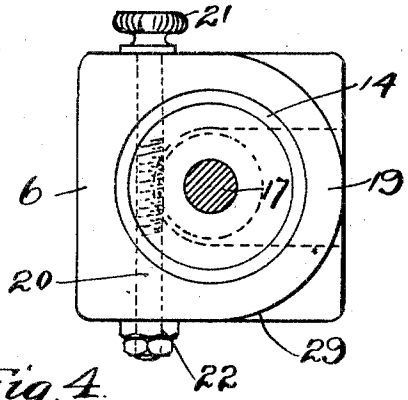


Fig. 4.

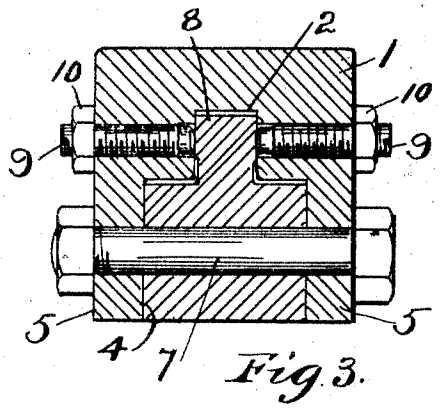


Fig. 3.

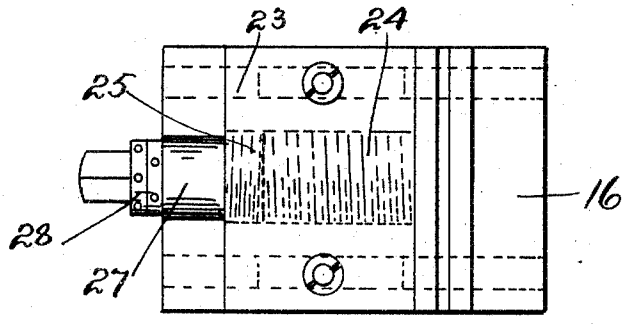


Fig. 5.

Witnesses

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No. 776,126. Patented November 29, 1904.

UNITED STATES PATENT OFFICE.

CLAUS A. EDLUND, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF ONE-HALF TO EMIL BERNSTROM, OF PROVIDENCE, RHODE ISLAND.

VISE.

SPECIFICATION forming part of Letters Patent No. 776,126, dated November 29, 1904.

Application filed December 28, 1903. Serial No. 186,787. (No model.)

To all whom it may concern:

Be it known that I, CLAUS A. EDLUND, a resident of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Vises; 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 numerals of reference marked thereon, which form a part of this specification.

This invention pertains to vises, the object of which being to construct an improved form of universally-jointed or swivel vises particularly designed for use in the machine-shop in the construction or finishing of the finer class of work.

A further object of the invention is to so construct the vise that each of the jointed parts will have a bearing-surface of considerable extent, with means for securing said joints to prevent the work from vibrating or chattering while being operated upon in the vise-jaws.

With these and other objects in view the invention consists of certain novel features of construction, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of my device, partly in section. Fig. 2 is a sectional end elevation on line 2 2 of Fig. 1 looking in the direction of the arrows. Fig. 3 is a sectional plan view on line 3 3 of Fig. 1 looking in the direction of the arrows. Fig. 4 is a plan view of the pivoted frame with the vise portion removed. Fig. 5 is a top plan view of the vise portion.

Referring to the drawings, 1 is the base portion, by which the vise is secured in any desired position. It is scored or channeled out at 2 on a radius from the center of the pivoting-bolt 7. This base portion is also counterbored at 4, leaving the two side ears 5 5 to receive the frame portion 6, which fits closely between and is pivoted to said ears on the base portion by the pivot-bolt 7.

At 8 is a rib made to fit closely in the circular recess 2 of the base for the purpose of giving a greatly-increased bearing-surface and prevent chattering when the work in the vise is being operated upon. The set-screws 9 9 are for the purpose of being set up on each side of the rib 8, locking the frame in the desired position, said screws themselves being locked from moving by the check-nuts 10 10. This frame 6 may be swung down at an angle of ninety degrees about the axis of the horizontal pivot-bolt 7 from the position shown in the drawings, bringing its face 11 down against the rest-block 12, or it may be held at any angle between the two points and securely locked there by the set-screws described above.

The circular edge of the base portion is graduated at 13 to facilitate the accurate setting of the frame at the desired angle. The upper face of this frame 6 is counterbored on a bevel at 14 to receive a corresponding circular beveled projection 15 on the under side of the vise portion 16. This vise portion is held to be rotated horizontally about the axis of a vertical center bolt 17, which is arranged to be set up and bind the vise in place by the nut 18, which nut is set into a recess 19 in the frame. This nut is threaded onto the end of said bolt and is made in the form of a worm-gear, having teeth cut on its outer edge, which teeth are engaged by a screw-threaded shaft 20, which serves as the worm and extends through the frame 6 from side to side, having a knurled handle 21 on one side, by which it is turned, and a nut and check-nut on its opposite end at 22.

At 29 is a graduated section on the circular edge of the frame portion, which graduation is for convenience in setting the vise portion at the desired angle as it is swung horizontally about the axis of the center bolt 17.

At 23 is the adjustable jaw portion of the vice. This jaw has a long tapped hole 24 made through its center portion at 23. This hole does not form a complete circle, the bottom portion of it being open, as shown at 30 in Fig. 2. A very short screw 25, which engages said tapped hole, is fixed to the end of a short shaft 26, which latter is squared for a wrench or handle at its outer end and is

held in position in the bearing 27 by the check-nuts 28. This bearing 27 is preferably made integral with the bed of the vise, being semicircular in form and smaller in diameter than that of the threaded hole in the jaw, thus allowing said jaw to be drawn back completely over this bearing, giving the jaws of the vise an unusually wide opening for one of its size. The ordinary method of reciprocating this jaw is by a long rotatable screw which is threaded through a short nut, which nut is fixed to the under side of the movable vise-jaw. By this construction the force is applied far below the line of resistance.

My method of constructing the vise is much more practical than that above described, first, because the power is applied in a direct line of the resistance; second, because the jaws are capable of being opened to their fullest extent, wider than that of any other construction for a given size; third, the screw and threaded portion of the adjustable parts are entirely covered over, thus effectually avoiding the annoyance of chips and dirt falling therein to prevent the free movement of the jaws.

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

1. In a device of the character described, in combination, a base portion, a frame portion to rotate vertically in said base, a bearing or steadying rib on said frame extending into said base, means for adjusting and securing said frame in the desired position as it is swung around said pivot, a vise pivoted to swing horizontally on said frame, means including a worm-gear which serves as a nut for binding said vise to said frame.

2. In a device of the character described, in combination, a base portion, a frame portion pivoted to rotate vertically in said base, means for securing said frame in the desired position as it is swung around said pivot, a horizontally-rotatable vise on said frame, a center bolt on which said vise may turn, a nut on said bolt for setting up and releasing said vise, means for rotating said nut to setting up or releasing said vise.

3. In a device of the character described, in combination, a base portion, a frame portion pivoted to rotate vertically in said base, a bearing or steadying rib on said frame extending into said base, means for securing said frame in the desired position as it is swung around said pivot, a horizontally-rotatable vise on said frame, a center bolt on which said vise may turn, a nut on said bolt for setting up and releasing said vise.

4. In a device of the character described, in combination, a base portion, a frame portion pivoted in said base, a bearing or steadying rib on said frame extending into said base, means for binding said rib to secure said frame in position, a vise pivotally secured to said frame, means including a center bolt and nut for binding said vise to said frame, the movable jaw of said vise having a threaded hole therein, a rotatable screw engaging said threaded hole by which said jaw may be reciprocated.

5. In a device of the character described, in combination, a base portion, a frame portion pivoted to rotate vertically in said base, a bearing or steadying rib on said frame extending into said base, means for securing said frame in the desired position as it is swung around said pivot, a horizontally-rotatable vise on said frame, a center bolt on which said rotatable plate may turn, a nut threaded on said bolt, an adjusting-screw engaging said nut by which said rotatable plate may be set up or released.

6. In a device of the character described, in combination, a base portion, a frame portion pivoted to rotate vertically in said base, a bearing or steadying rib on said frame extending into said base, set-screws in said base to engage and bind said rib and hold said frame in the desired position as it is swung around said pivot, a horizontally-rotatable vise on said frame, a center bolt on which said vise may turn, a nut on said bolt for setting up and releasing said vise.

7. In a device of the character described, in combination, a base portion, a frame portion pivoted to rotate vertically in said base, a bearing or steadying rib on said frame extending into said base, set-screws in said base to engage and bind said rib and hold said frame in the desired position as it is swung around said pivot, a horizontally-rotatable vise on said frame, a center bolt on which said rotatable plate may turn, a nut threaded on said bolt, an adjusting-screw engaging said nut by which said rotatable plate may be set up or released.

8. In a device of the character described, in combination, a base portion, a frame portion pivoted to rotate vertically in said base, a bearing or steadying rib on said frame extending into said base, set-screws in said base to engage and bind said rib and hold said frame in the desired position as it is swung around said pivot, a horizontally-rotatable vise on said frame, a center bolt on which said vise may turn, a nut on said bolt for setting up and releasing said vise, said vise having one fixed and one movable jaw, said movable jaw having a threaded hole therein, a rotatable screw engaging said threaded hole by the movement of which screw said jaw may be reciprocated.

9. In a device of the character described, in combination, a base portion, a frame portion adjustably pivoted in said base, means for binding said frame in said base, a vise pivoted to swing horizontally on said frame, means for binding said vise to said frame, a movable jaw on said vise, a large threaded hole in said

jaw, a short rotatable screw engaging said threaded hole, a fixed bearing for said screw the threaded hole in said jaw being of a size sufficient to allow said jaw to be drawn back over said bearing.

10. In a device of the character described, in combination, a base portion, a frame portion adjustably pivoted in said base, means for binding said frame in said base, a vise pivoted to swing horizontally on said frame, means for binding said vise to said frame, a movable jaw in said vise, a large threaded hole in said jaw, a short screw engaging said threaded hole, a bearing for said screw, means whereby said jaw may be drawn back over said bearing.

11. In a device of the character described, in combination, a base portion, a frame portion pivoted in said base, a bearing or steadying rib on said frame extending into said base, means for binding said rib to secure said frame rigidly in position, a vise pivotally secured to said frame, the movable jaw of said vise having a large threaded hole therein, a short rotatable screw engaging said threaded hole, a fixed bearing for said screw, means whereby said jaw may be drawn back over said bearing.

In testimony whereof I have hereunto set my hand this 24th day of December, A. D. 1903.

CLAUS A. EDLUND.

In presence of—

HOWARD E. BARLOW,

E. I. OGDEN.