

No. 630,531.

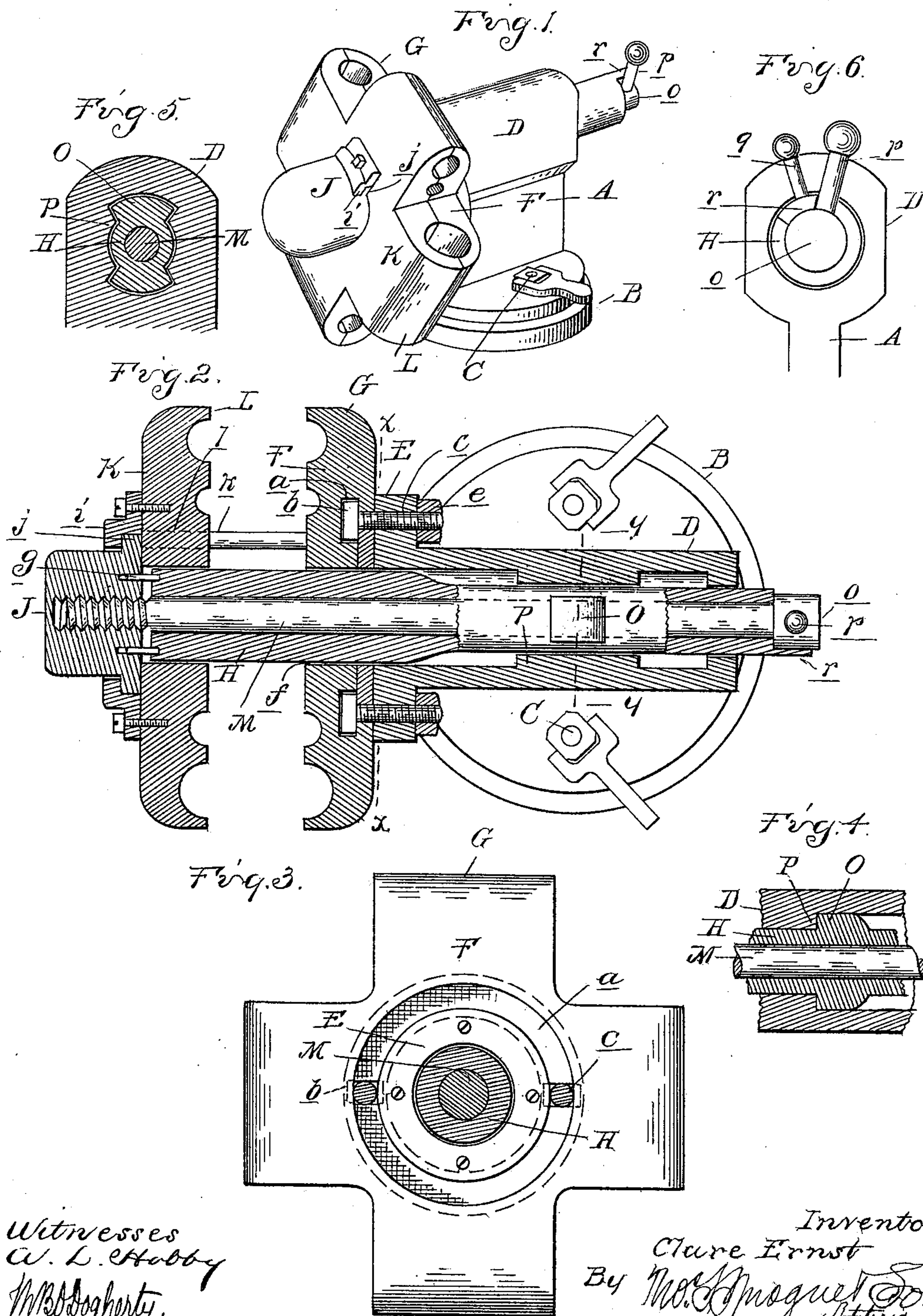
Patented Aug. 8, 1899.

C. ERNST.

WISE.

(Application filed Feb. 28, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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WISE.

SPECIFICATION forming part of Letters Patent No. 630,531, dated August 8, 1899.

Application filed February 28, 1899. Serial No. 707,133. (No model.)

To all whom it may concern:

Be it known that I, CLARE ERNST, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have
5 invented certain new and useful Improvements in Vises, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention has reference to an improved
10 vise particularly designed for use in holding metal tubing; and the invention consists in the peculiar construction, arrangement, and combination of the various parts of the vise, as will be more fully hereinafter described
15 and shown.

Figure 1 is a perspective view of the vise. Fig. 2 is a horizontal central section there-through, partly in plan. Fig. 3 is a section taken on line *x x*, Fig. 2. Fig. 4 is a horizontal
20 section through the portion of the mechanism shown in plan in Fig. 2, the parts being in their locked position. Fig. 5 is a section taken on line *y y*, Fig. 2; and Fig. 6 is an end elevation of the vise.

25 The reference-letter A designates a standard, which is swiveled in any suitable manner upon the base-plate B and is locked thereto by means of clamping-bolts C. The standard is provided with a horizontal tubular head D,
30 upon one end of which and preferably integral therewith is an annular flange E. Swiveled to the flange is one of the clamping-heads F, carrying a multiple of clamping-jaws G.

Any suitable means may be employed for
35 swiveling the head to the flange; but the construction I preferably adopt is as follows: In the face of the head adjacent to the flange I form an annular undercut groove *a*, and in said groove are arranged the heads *b* of bolts *c*,
40 which are adapted to extend into and through the flange, as shown. The head thus formed may be rotated into any desired position and is clamped in said position by means of the clamping-nuts *e*.

45 The head F is centrally apertured at *f*, and arranged within the tubular head D and extending through the aperture referred to is a "tubular" supporting arm or stem H, which carries upon its outer end a head in the form
50 of a nut J, secured to the stem by means of pins *g*.

The letter K designates a complementary clamping-head provided with a multiple of grooved clamping-jaws L, which correspond to the clamping-jaws upon the head F. The
55 head K is loosely sleeved upon the tubular stem adjacent to the nut thereon, and lateral movement of the head relative to the nut is prevented by means of lugs *i* upon the head, which engage over an annular flange *j* upon
60 the nut. *k* designates pins secured to the head F, which engage within sockets *l* within the head K. These pins maintain the heads in their proper relative position.

Arranged within the stem H is a screw M, 65 which is adapted to engage with the nut J. This screw is provided with a head *o*, in which is arranged a handle *p*, and *q* designates a similar handle upon the stem H.

The tubular stem H just referred to is pro- 70 vided with two locking-lugs O, diametrically arranged, which upon partial rotation within the head D are adapted to engage with the two corresponding oppositely-arranged lugs P, formed upon the interior of the tubular
75 head D to prevent the lateral movement of the stem within said head.

The mechanism having been thus described, the operation of the vise is as follows: The parts being arranged as in Fig. 2, it will be
80 readily apparent that the operator is enabled to move the head K to or away from the complementary head F at will, the lugs being shown out of engagement. The tube that is to be held in the vise is placed within the
85 groove in one of the clamping-jaws G and the head K moved into engagement with the tube to be clamped. The movement of the head K produces a corresponding lateral movement of the tubular supporting-stem, so that when
90 the head is in proximity to the jaw G the locking-lugs upon said stem are at the rear, but out of contact with the corresponding lugs upon the interior of the standard. To lock
95 the tubular stem to the standard, the former is rotated one-quarter of a revolution to bring the oppositely-arranged locking-lugs thereon into engagement with the complementary locking-lugs upon said standard, as shown in
100 Fig. 4. The final step of clamping is effected by rotating the screw M, which by engaging the nut J causes the head K to move upon

the lock-supporting stem or arm and to be tightly clamped against the article that is to be held.

In unclamping the vise the screw is first rotated and subsequently the tubular stem is turned.

To more readily loosen the parts, I form upon the end of the stem II a lug *r*, against which the handle upon the screw is adapted to strike. Thus the operator is enabled to unlock the parts by the use of a single device.

While I have shown and described one of the clamping-heads as swiveled to the standard, I do not desire to be limited to this construction, as it is obvious that both of the heads may be clamped to the said standard by means of the screw.

What I claim as my invention is—

1. In a vise, the combination with a standard, of complementary clamping members, a rotatable support slidingly engaging the standard and extending through the members, said support being adapted upon lateral movement in one direction to effect an engagement of the members about the article to be clamped, complementary locking devices upon the support and standard, and means for rotating the support after its lateral movement, to effect a locking engagement between said locking devices.

2. In a vise, the combination with a standard, of complementary clamping members, a rotatable support slidingly engaging the standard and extending through the members, said support being adapted upon lateral movement in one direction to effect an engagement of the members about the article to be clamped, means for rotating the support after its lateral movement, into a locking engagement with the standard and means for subsequently sliding one of the members upon the locked support to clamp the article.

3. In a vise, the combination of a standard, a support slidingly engaging the standard for free endwise movement in either direction, a nut upon the support secured to the latter against rotary movement, a clamping member sleeved upon said support adjacent to the nut, a complementary clamping member arranged intermediate the sleeved member and the standard, means for locking the support to the standard after the engagement of the clamping members about the article has been effected and a screw engaging the nut adapted when actuated to clamp the members to the article.

4. In a vise, the combination of the standard, a tubular head thereon, a support arranged within the head having free endwise movement in either direction, a nut upon the support secured to the latter against rotary movement, complementary clamping-heads sleeved over the support intermediate the nut and standard, means for locking the support to the standard after an engagement has been effected between the clamping-heads and the article to be held, and a screw engaging the

nut adapted when actuated to clamp the head to the article.

5. In a vise, the combination of the standard, a tubular head thereon, a tubular supporting-arm arranged within the head for free endwise movement in either direction, a nut upon the support, complementary clamping-heads sleeved over the supporting-arm intermediate the nut and standard, means for locking the arm to the standard and a screw within the tubular arm engaging the nut upon the latter.

6. In a vise, the combination of the standard, a tubular head thereon having a locking-lug formed upon the interior thereof, a support arranged within the head for rotary and free endwise movement in either direction, and provided with a lug adapted to be engaged with the lug, within the tubular head, a nut upon the support, complementary clamping-heads sleeved over said support intermediate the nut and standard, means for rotating the support and a screw engaging the nut adapted to clamp the heads about the article.

7. In a vise, the combination of the standard, a tubular head thereon, a supporting-arm arranged within the head having free endwise movement in either direction, a nut upon one end of the supporting-arm, a clamping-head loosely sleeved upon the arm, a complementary head swiveled to the standard, means for locking the arm within the tubular head and a screw engaging the nut adapted to move the sleeve-clamping head upon the locked support.

8. In a vise, the combination of a standard, a tubular head thereon, a supporting-arm arranged within the head having free endwise movement in either direction, a nut secured upon one end of the arm, a clamping-head sleeved upon the arm and swiveled to the nut, a complementary head swiveled to the standard, means for locking said latter head to the standard, mechanism for locking the arm within the tubular head and a screw engaging the nut adapted when actuated to clamp the heads about the article.

9. In a vise, the combination of a standard, a tubular head thereon, a supporting-arm arranged within the head having free lateral movement in either direction, a nut secured upon one end of the arm, a clamping-head provided with a multiple of clamping-jaws sleeved upon the arm and swiveled to the nut, a complementary head carrying a multiple of clamping-jaws thereon, swiveled to the standard, guide-pins connecting the heads, means for locking the arm within the tubular head and a screw engaging the nut adapted when actuated to clamp the heads about the article.

In testimony whereof I affix my signature in presence of two witnesses.

CLARE ERNST.

Witnesses:

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MAMIE L. HOGLE.