

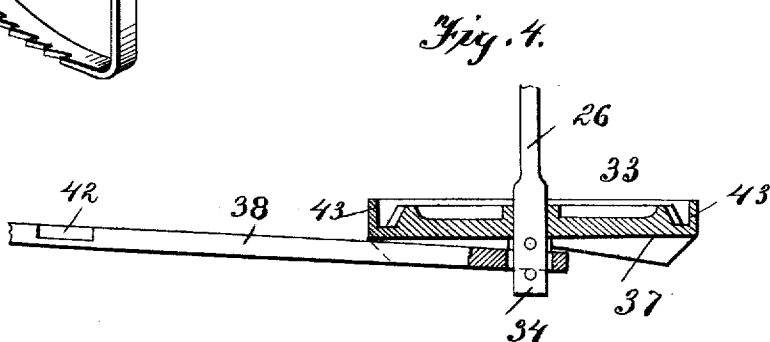
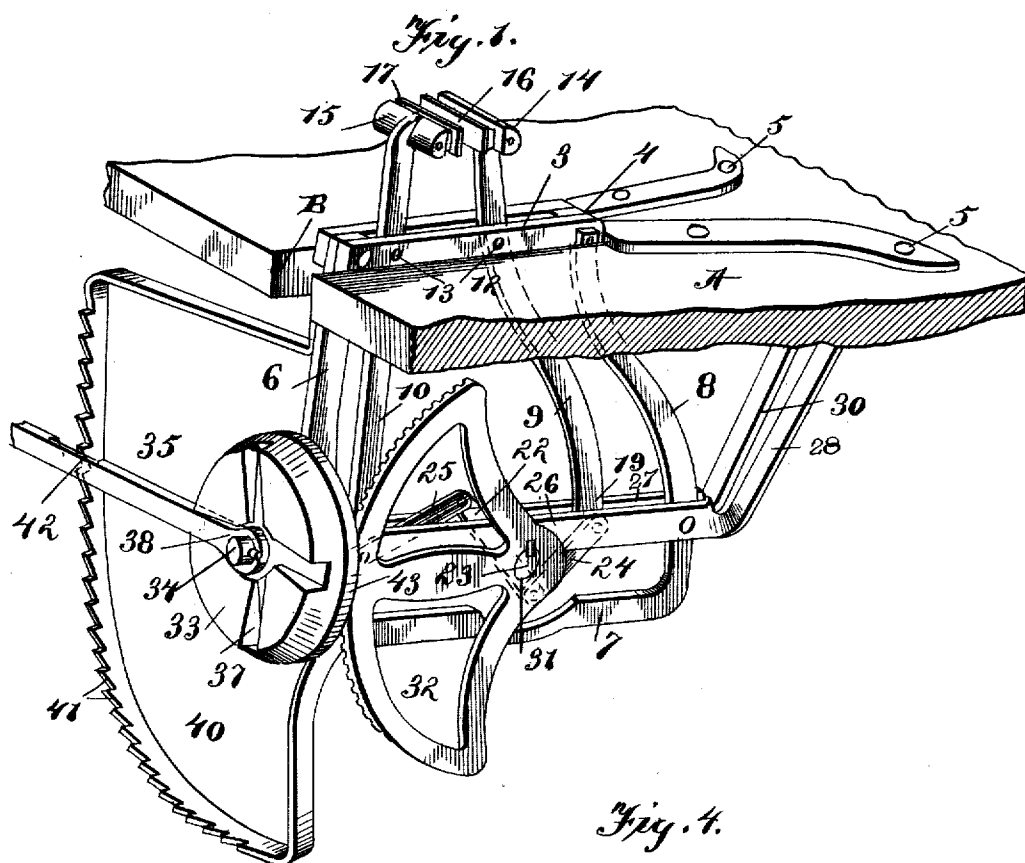
(No Model.)

3 Sheets—Sheet 1.

W. P. BLISS.
COMPOUND LEVER VISE.

No. 567,331.

Patented Sept. 8, 1896.



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A. J. Smith

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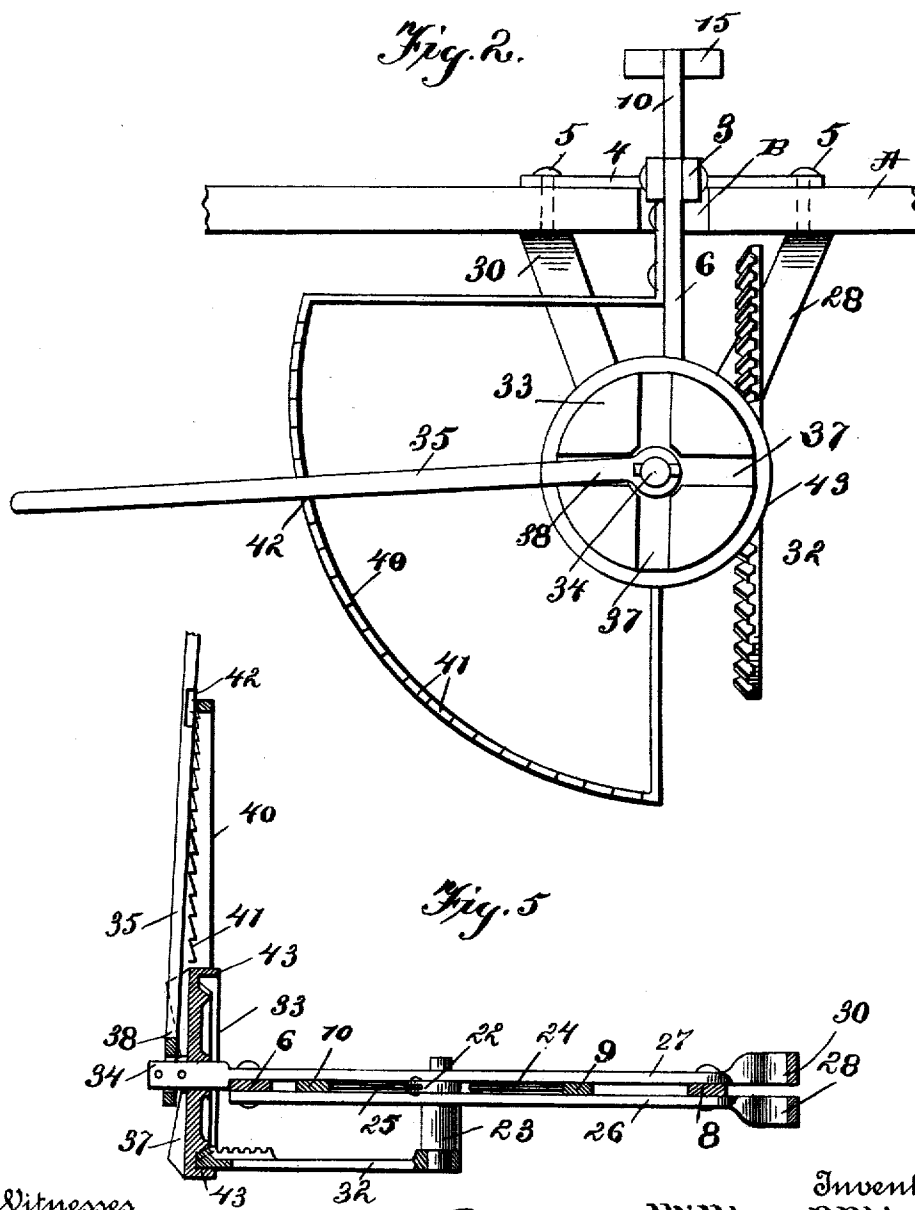
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COMPOUND LEVER VISE.

No. 567,331.

Patented Sept. 8, 1896.



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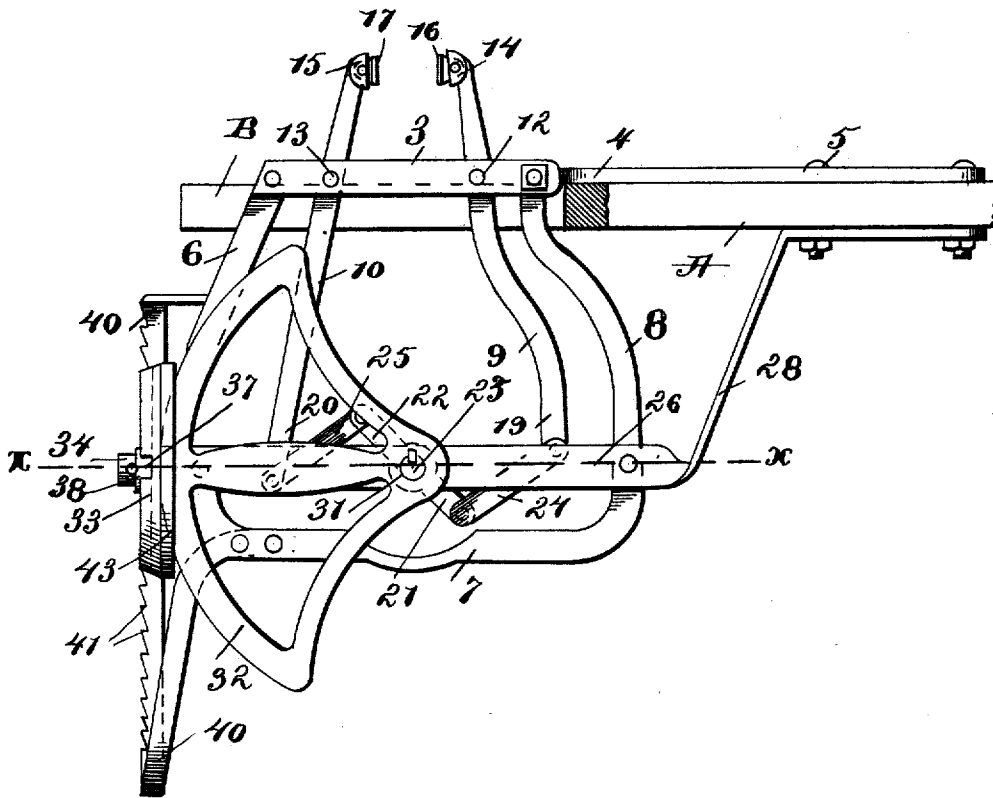
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Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM P. BLISS, OF AURORA SPRINGS, MISSOURI.

COMPOUND-LEVER VISE.

SPECIFICATION forming part of Letters Patent No. 567,331, dated September 8, 1896.

Application filed May 9, 1896. Serial No. 590,920. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. BLISS, a citizen of the United States, residing at Aurora Springs, in the county of Miller and State of Missouri, have invented certain new and useful Improvements in Compound Lever-Vises; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to make and use the same.

My invention has relation to lever vises, and the object is to provide a device of this class by which the jaws can be opened or closed to their fullest extent almost instantly, thereby effecting a very great saving in the time of the workman, and at the same time so constructed as to hold an article between the jaws with a powerful grip; and to these ends the novelty consists in the construction, combination, and arrangement of the several parts of the same, as will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings the same reference letters and numerals indicate like parts of the invention.

Figure 1 is a perspective view of my improved vise as it appears in operation secured to the end of a work-bench. Fig. 2 is a front view of the same. Fig. 3 is a side elevation of the same taken on a cross-section of the bench. Fig. 4 is a cross-section of the angle-gear 33 and its hand-lever, and Fig. 5 is a horizontal section on the line *x x* of Fig. 3.

A is the bench or table, and B a slot in which the jaws of the vise reciprocate.

3 represents the upper portion of the frame, located in the slot B of the bench A, and its rear end 4 is bifurcated and secured to the top of the bench by screws or bolts 5. An arm 6 of this frame extends downwardly, thence rearwardly and horizontally at 7, and upwardly at 8, connecting with the frame 6. Two levers 9 and 10 are fulcrumed at 12 13 in the frame 6, their upper contiguous rigid jaws 14 15 being provided with hinged auxiliary jaws 16 17, which preserve their parallelism at all points or positions of the levers 9 and 10. The lower ends 19 and 20 of these levers 9 and 10 are connected by pitmen 24 25 oppositely to the arms 21 22, rigidly secured on a rock-shaft 23, journaled in braces 26 27,

which are secured to the frame-arms 6 and 8, and their rear ends 28 and 30 extend upwardly and are secured to the under side of the bench A by screws or bolts, as shown. One end 31 of the rock-shaft 23 is provided with a rigid segmental gear 32. The teeth on the segment mesh with an angle-gear 33, journaled on a stud 34, formed integral with the brace 26, and said stud projects through the back of said gear and forms a bearing for one end of a hand-lever 35. The back of this angle-gear 33 is formed with a series of radial rectangular slots 37, which engage the pivoted end 38 of the hand-lever 35, so that the gear 33 may be rotated a portion of a circle. The end 38 of the lever 35 has two movements, a circular one on the stud 34 and an oscillating movement in and out of the radial slots 37 in the angle-gear 33, and said lever can be released from one radial slot and swung around to engage one more convenient to the hand. A segmental rack 40 is suitably secured to the braces 6 and 7, and its periphery is provided with a series of ratchet-shaped teeth 41, which engage the integral detent 42 on the hand-lever 35 and serve to lock the said lever and angle-gear rigidly in place when an article is held between the jaws 16 and 17. An angular flange 43, secured to the outside or back of the angle-gear 33, extends over the segmental gear 32 and serves to retain the teeth on both gears in mesh, thereby preventing them from springing apart when great strain is applied to the gear 33 by means of the lever 35.

The operation of the vise will be readily understood from the above description, taken in connection with the drawings.

Although I have specifically described the construction and relative arrangement of the several elements of my invention, I do not desire to be confined to the same, as such changes or modifications may be made as clearly fall within the scope of my invention without departing from the spirit thereof.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A vise of the class described, consisting of the frame, in which is fulcrumed the jaw-levers, the lower ends of which are connected by pitmen to the rigid arms of a rock-shaft, to one end of which is secured a segmental

gear, the teeth of which mesh with the teeth of an angle-gear journaled upon a brace on said frame, and having radial slots which engage the pivoted end of a hand-lever, substantially as and for the purpose specified.

2. The frame 3, in which is fulcrumed the jaw-levers 9 and 10, the lower ends 19 and 20 of which are connected by pitmen 24, 25, to the rigid arms 21, 22, of the rock-shaft 23, provided with the segmental gear 32 and the gear 33, journaled on a stud 34 and provided with radial rectangular slots 37, which engage the end 38 of the hand-lever 35, substantially as and for the purpose specified.

3. The frame 3, in which is fulcrumed the jaw-levers 9 and 10, the lower ends of which

are connected by pitmen 24, 25, to the rigid arms 21, 22, of the rock-shaft 23, provided with the rigid segmental gear 32, having the angular flange 43, in combination with the angle-gear 33 journaled on the stud 34, and having radial slots 37 which engage the hand-lever 35, having the detent 42, which engages the teeth 41, on the segmental rack 40, secured to the frame, substantially as and for the purpose specified.

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

WILLIAM P. BLISS.

Witnesses:

JOHN A. ROARK,
AUDRY FARISS.