I. A. M. LARSSON.

BENCH VISE.

APPLICATION FILED APR. 18, 1918.

1,277,324. Patented Aug. 27, 1918.

Fig. 1.

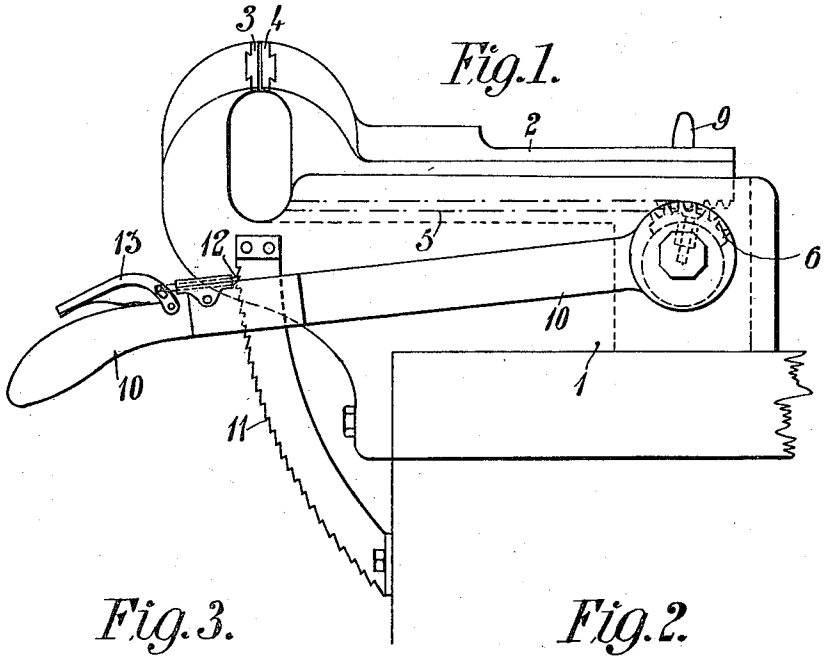


Fig. 3.

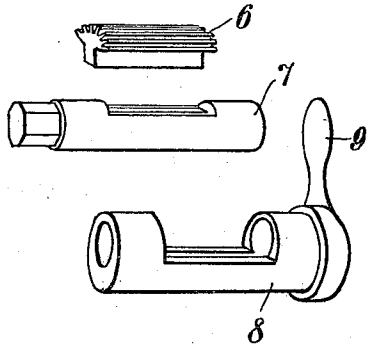
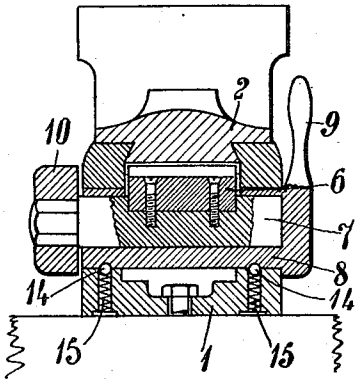


Fig. 2.



Inventor.

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By Henry Orth & Co. Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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BENCH-VISE.

1,277,324. Specification of Letters Patent. Patented Aug. 27, 1918.

Application filed April 18, 1918. Serial No. 229,456.

To all whom it may concern:

Be it known that I, IVAN AUGUST MAURITZ LARSSON, a citizen of the Kingdom of Sweden, residing at Stockholm, Sweden, have invented new and useful Improved Bench-Vises, of which the following is a specification.

This invention relates to bench-vises of that class in which the movable jaw is provided with a rack and is manipulated to and from the fixed jaw by means of a pinion engaging with said rack and provided with an operating and locking device. The object of the invention is to enable a more quick-acting initial adjustment of the movable jaw than may be accomplished by turning the pinion.

To this end the pinion is eccentrically mounted in a member pivotally mounted in the fixed jaw so that said pinion may be brought into or out of engagement with the rack of the movable jaw by turning the said member thereby enabling the movable jaw to be operated either through agency of the pinion or by hand independently of the pinion.

In the accompanying drawing forming part of this specification, Figure 1 is a side-elevation of my improved vise. Fig. 2 is a vertical section of the vise. Fig. 3 is a detail sectional view showing the mounting of the pinion.

Referring to the drawing, the vise is composed of a fixed jaw-piece 1, adapted to be attached to the bench, and a movable jaw piece 2, slidably mounted in a channel or slot formed in the fixed jaw 1. Each jaw is provided with a detachable piece 3 or 4 adapted to grip the object to be placed in the vise. The movable jaw 2 is provided on its under face with a rack 5, preferably made integral with the jaw. Said rack is adapted to coöperate with a toothed segment 6. The toothed segment 6 is mounted in a bolt 7 which is in turn eccentrically mounted in a socket or sleeve 8 journaled in the fixed jaw 1 and split, as shown in Fig. 3, to permit a certain turning movement of the toothed segment relatively to the sleeve 8. The sleeve 8 extends outside the fixed jaw 1 and carries a handle 9. The bolt 7 extends outside the opposite end of the sleeve 8 and the jaw 1 and is connected to an operating lever 10 movable along a segmental ratchet 11 and carrying a pawl 13 working in the teeth of the ratchet 11. The sleeve 8 may, preferably, be provided with a locking device consisting, for instance, of balls 14 mounted in holes in the fixed jaw 1 and acted upon by spiral springs 15 tending to keep the balls in engagement with recesses formed in the circumference of the sleeve 8.

In the position shown in Fig. 1, the jaws are brought closely together so that the pieces 3 and 4 touch each other. The toothed segment 6 is in the position shown in mesh with the rack 5. When it is desired to place an object between the jaws, the sleeve 8 is first turned by means of the handle 9 through a certain angle, as for instance 90 degrees, so that the toothed segment is disengaged from the rack 5. The movable jaw is thus free to be moved to the distance required, so that the object can be placed between the pieces 3, 4 of the jaws, whereupon the movable jaw 2 is moved, still by hand, as far as possible toward the work. The sleeve 8 is then turned back sufficiently to bring the toothed segment 6 into engagement with the rack 5. Then by moving the lever 10 downward the toothed segment may be turned so as to cause the movable jaw 2 to tightly grip the work. In releasing the work the lever 10 may, if necessary, be first moved upward to effect an initial releasing movement of the jaw 2, whereupon the handle 9 is shifted to disengage the toothed segment 6 from the rack 5 so that the jaw 2 will be free to be pulled out.

What I claim and desire to secure by Letters Patent is:—

1. A vise comprising a fixed jaw, a movable jaw, slidably mounted in the fixed jaw and provided with a rack, a toothed segment adapted to actuate said rack, means for bringing the toothed segment into and out of engagement with the rack, means for turning the segment and means for holding it in desired position.

2. A vise comprising a fixed jaw, another jaw slidably mounted in a slot in the fixed jaw, a rack provided on said movable jaw, a toothed segment adapted to coöperate with said rack, said segment being eccentrically mounted in a member pivotally mounted in the fixed jaw, means for turning said member, means for turning the toothed segment in said member and means for holding the segment in desired position.

3. A vise comprising a fixed jaw, another jaw slidably mounted in a slot in the fixed jaw, a rack provided on said movable jaw,

a toothed segment adapted to coöperate with said rack, said toothed segment being eccentrically mounted in a member pivotally mounted in the fixed jaw, a handle on said member for turning the same, means for arresting the sleeve in desired position, a lever connected with the toothed segment for turning it in the said member, a pawl on said lever, and a stationary segmental ratchet, in which said pawl is adapted to work.

4. A vise comprising a fixed jaw, another jaw slidably mounted in a slot in the fixed jaw, a rack provided on said movable jaw, a toothed segment adapted to coöperate with said rack, a sleeve pivotally mounted in the fixed jaw, in which sleeve the toothed segment is eccentrically mounted, recesses formed in the circumference of said sleeve, adapted to receive spring operated balls, mounted in holes in the fixed jaw, a handle on said sleeve for turning the same, a lever connected to the toothed segment for turning it in the sleeve, a pawl on said lever and a stationary segmental ratchet, in which said pawl is adapted to work.

In testimony whereof I have signed my name.

IVAN AUGUST MAURITZ LARSSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."