

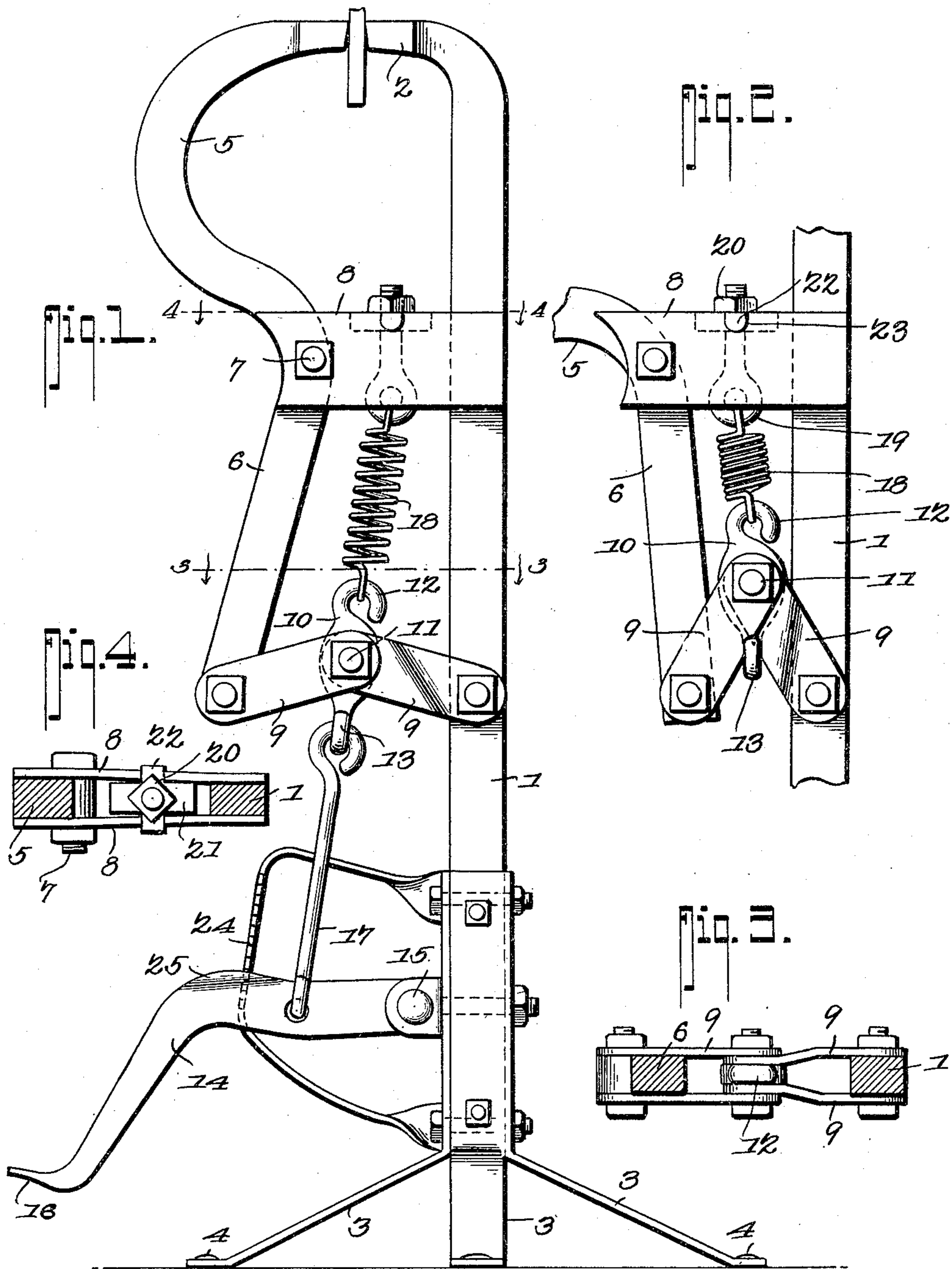
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WISE.

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SPECIFICATION forming part of Letters Patent No. 790,880, dated May 30, 1905.

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To all whom it may concern:

Be it known that I, DAVID L. BOYER, a citizen of the United States, residing at Point Pleasant, in the county of New Madrid and State of Missouri, have invented a new and useful Vise, of which the following is a specification.

This invention relates to vises, and has for its object to provide for conveniently controlling the movable jaw of the vise by foot, so as to leave both hands of the operator free for engaging and disengaging the work with respect to the jaws of the vise.

It is furthermore designed to provide for imparting a very powerful movement to the movable jaw of the vise and to compactly arrange the operating connection between the foot-lever and the movable jaw, so as to be housed between the standard of the vise and the tail portion of the movable jaw.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a side elevation of a vise embodying the features of the present invention. Fig. 2 is a fragmentary side elevation illustrating the disposition of the toggle in the normal open position of the jaw. Fig. 3 is a detail sectional view on the line 3 3 of Fig. 1. Fig. 4 is a similar view on the line 4 4 of Fig. 1.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

The present vise includes a standard 1, which terminates at its upper end with a laterally-directed integral stationary jaw 2 and is supported at its lower end upon suitable feet or leg-standards 3, which are bolted or otherwise fastened to the lower end of the standard and diverged therefrom with their

outer ends rigidly secured to the floor or other support by means of fastenings 4.

A movable jaw 5 coöperates with the stationary jaw 2 and has a downwardly-extended tail portion 6, constituting a lever, the upper end portion of which is fulcrumed at 7 between a pair of arms 8, rigidly carried by the standard at a suitable distance below the stationary jaw 2. The fulcrum 7 is preferably in the nature of a bolt in order that the movable jaw may be removed whenever desired. The lower end of the tail portion of the movable jaw is loosely connected to the standard by means of two sets of toggle-links 9, there being a cross-head 10 interposed between the sets of links with a bolt 11 piercing the middle of the cross-head and the inner ends of all of the links, so as to form a pivotal connection between all of said members. At the upper end of the cross-head 10 is a hook or eye 12, there being a similar hook or eye 13 at the lower end of the cross-head. Below the toggle is a lever 14, fulcrumed upon the standard, as at 15, and terminating at its outer lower end in a suitable foot-piece or treadle 16. A link or connecting-rod 17 extends upwardly from the intermediate portion of the foot-lever and has its upper end loosely engaged with the lower hook 13 of the cross-head 10 for the purpose of drawing the toggle downwardly to force the tail portion 6 of the movable jaw outwardly, and thereby draw the upper end of the jaw inwardly into coöperative relation with the stationary jaw 2. The toggle is normally and yieldably held at its upper limit by means of a helical spring 18, which has its upper end connected to an eyebolt 19, extending upwardly between the arms 8 and fixed in position by means of a nut 20 engaging the upper threaded end of the eyebolt and bearing against a support or washer 21, having arms 22 received within notches or seats 23 in the tops of the arms 8. A suitable rack 24 is carried by the standard, and the foot-lever 14 is provided with a lip 25 to engage the rack, and thereby hold the lever at any adjusted position. Normally the foot-lever 14 is disengaged from the rack 24, and the spring 18 thereby supports the

toggle at its upper limit with the jaws of the vise separated. Upon depressing the lever 14 the toggle is drawn downwardly against the tension of the spring, and thereby the movable jaw is drawn inwardly into cooperative relation with the stationary jaw.

It will here be noted that the toggle and the spring are located between the tail portion of the movable jaw and the standard, thereby providing a compact device wherein the spring 18 is housed between the standard and the movable jaw. Furthermore, the tension of the spring 18 may be adjusted and lost tension taken up by means of the adjusting-nut 20. By connecting the spring directly to the toggle the latter is prevented from dropping below the horizontal into an inoperative position, wherefore the present location of the spring has a material advantage and is an important feature of the present invention.

Having fully described the invention, what is claimed is—

1. In a vise, the combination of a standard having a fixed jaw, an arm projected laterally from the standard, a movable jaw fulcrumed upon the arm, a toggle connected at opposite ends to the jaw and the standard, a spring connected to the toggle and the arm, and a lever fulcrumed upon the standard and connected to the toggle.

2. In a vise, the combination of a standard having a fixed jaw, an arm projected laterally from the standard, a movable jaw ful-

crumed upon the arm, a toggle connected to the movable jaw and the standard, a spring connected to the toggle, a spring-adjusting device carried by the arm and connected to the spring, and a lever fulcrumed upon the standard and connected to the toggle.

3. In a vise, the combination of a standard having a fixed jaw, an arm projected from the standard, a movable jaw fulcrumed upon the arm, a toggle connected to the movable jaw and the standard, a spring connected to the toggle, an adjusting-bolt carried by the arm and connected to the spring, a clamping-nut carried by the bolt, and a lever fulcrumed upon the standard and connected to the toggle.

4. In a vise, the combination of a standard having a fixed jaw, an arm projected laterally from the standard, a movable jaw fulcrumed intermediate of its ends upon the arm, a toggle connected to one end of the movable jaw and the standard, a cross-head included in the toggle, a spring connected to one end of the cross-head and to the arm, a link connected to the other end of the cross-head, and a lever fulcrumed upon the standard and connected to the link.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DAVID L. BOYER.

Witnesses:

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