

No. 658,574.

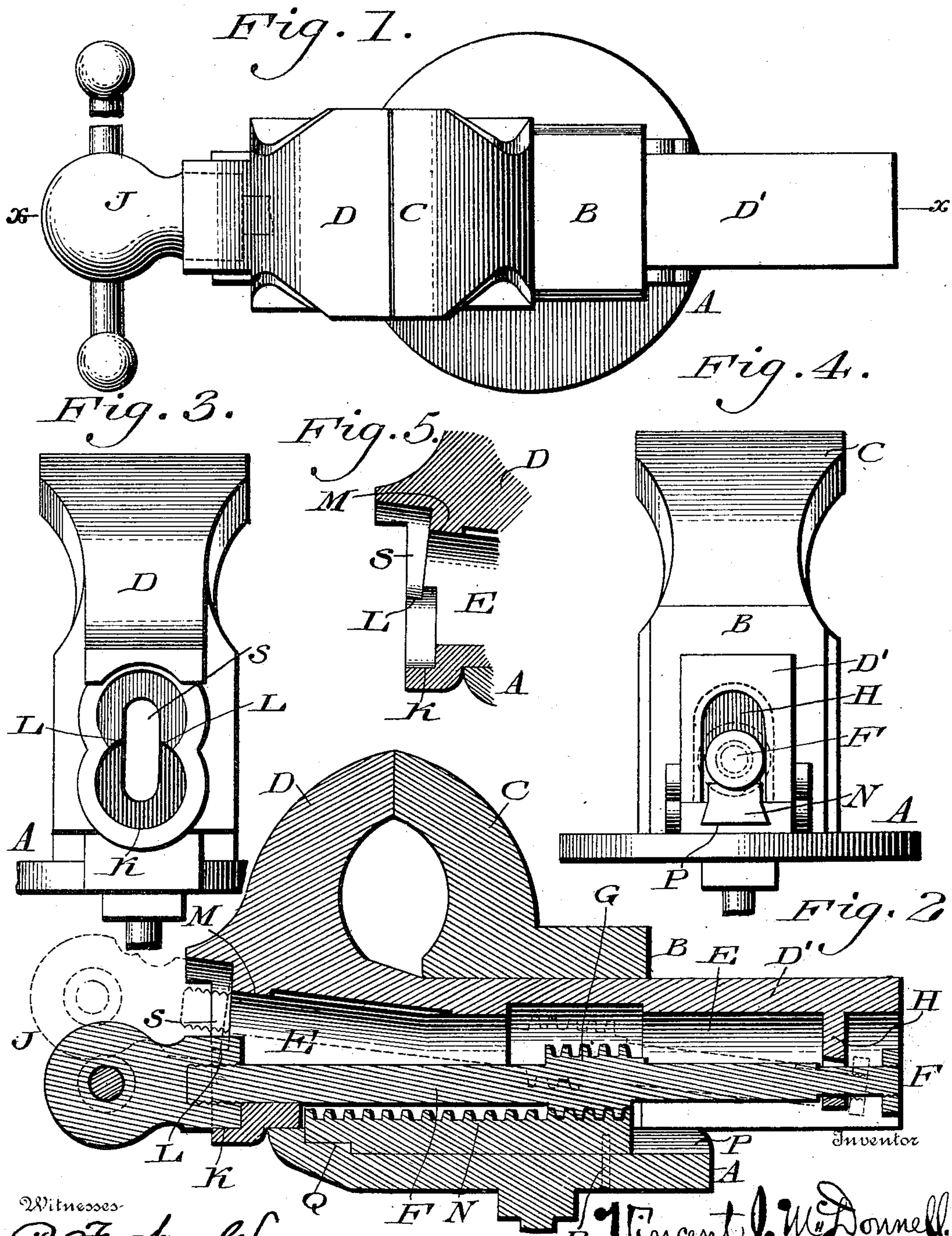
Patented Sept. 25, 1900.

V. J. McDONNELL.

WISE.

(Application filed Jan. 30, 1900.,

(No Model.)



Witnesses-

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UNITED STATES PATENT OFFICE.

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WISE.

SPECIFICATION forming part of Letters Patent No. 658,574, dated September 25, 1900.

Application filed January 30, 1900. Serial No. 3,284. (No model.)

To all whom it may concern:

Be it known that I, VINCENT J. McDONNELL, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Vises, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a vise provided with means for adjusting the movable jaw thereof by means of a gear-carrying shaft which may receive sliding motions for temporarily setting the movable jaw of the vise and then rotated for tightly closing said jaw, members being provided for holding said shaft in elevated position and guiding it in its sliding motions, and other novel features are presented, as will be hereinafter described, and pointed out in the claims that follow the specification.

Figure 1 represents a top or plan view of a vise embodying my invention. Fig. 2 represents a longitudinal vertical section thereof. Fig. 3 represents a front end view of a portion thereof. Fig. 4 represents a rear end view of a portion thereof. Fig. 5 represents a vertical section of a detached portion.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates the bed of the vise, and B designates the collar, which rises therefrom and carries the stationary jaw C. Passing freely through the collar B is the box D' of the movable jaw D, said box having therein the chamber E, the forward portion of which is flaring or conical.

F designates a shaft, which has the worm G thereon and is mounted freely at one end in an obliquely-arranged opening in the hanger or bearing-piece H, which is located in the chamber E, said shaft carrying at the other end the head J, whose inner portion is primarily seated on the shoulder K on the base of the front wall of the chamber E. Above said shoulder K is the shoulder L, which is also formed in the front wall of said chamber, it being noticed that the shoulder K is deeper seated than the shoulder L. In the upper wall of the flaring portion of the

chamber E is the depending shoe M, against which the shaft F when raised is adapted to abut and on which it may ride in its sliding motions.

Seated on the bed A is the worm-rack N, with which the worm G meshes, the same being fitted in the channel P in said bed and firmly rested against the shoulder Q at the front of the bed and controlled by a pin or screw R at the rear thereof, the sides of said channel and rack being inclined, forming a dovetailed joint for said parts, whereby the rack is prevented from lateral displacement, but permitted to be removed when desired by sliding motion, the pin or screw, which is shown in dotted lines, having been previously withdrawn.

The operation is as follows: The shaft F is rotated by the head J as a handle sufficient to remove said head from the shoulder K, and thus slightly move the jaw D from the jaw C. Said shaft is then raised, its fore part then passing through the contracted channel S at the front of the chamber E and abutting against the shoe M, while the head is seated on the upper shoulder L, it being evident that as the worm G follows the shaft F it is disengaged from the rack N. The jaw D is now opened to an extent sufficient to permit the article to be gripped to be placed between the two jaws. Then said jaw is closed against said article and the shaft lowered, whereby the worm again meshes with the rack, said shaft occupying the base of the channel S. The shaft is then rotated, whereby the jaw D is forced tightly against the article, thus effectively gripping the latter. In order to remove the article, the shaft may be rotated in reverse order or raised and drawn out, thus in either case opening the jaws. In the elevated and sliding motions of the shaft it rides on the shoe M and lower-inclined wall of the opening of the hanger H, thus reducing friction and avoiding material wearing away of parts in contact.

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

1. In a vise, a rotary and sliding operating-shaft for a movable jaw thereof, and gearing

for said shaft, said shaft being adapted to be geared and ungeared and shoulders at different altitudes on the wall of the opening which said shaft occupies to support the head of the shaft in elevated and lowered positions.

2. In a vise, a movable jaw, a shaft adapted to operate the latter by rotary and sliding motions, a box on said jaw receiving said shaft, and a depending shoe on the upper wall of the interior of said box on which said shaft rides during the sliding motions of the shaft in the primary adjustment of said jaw.

3. A vise, a stationary jaw, a movable jaw, a box on the latter, a gear-carrying shaft mounted in said box and adapted to be raised and lowered, a head on said shaft, a rack on the bed of the vise with which the gear of the shaft may engage, and shoulders at the forward end of said box, the same being at different altitudes to receive the head of the

shaft to support the latter in its geared and ungeared positions.

4. A vise consisting of a stationary jaw, a bed supporting the same, a movable jaw, a box carrying the latter, a rack on said bed, a headed shaft in said box, a gear on said shaft adapted to mesh with said rack, said shaft being adapted to be elevated and lowered and thus disengaged from said rack, shoulders on said box at different altitudes to receive the head of said shaft in its raised and lowered positions respectively and a depending shoe in the upper side of the interior of said box on which said shaft when elevated is adapted to ride.

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Witnesses:

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