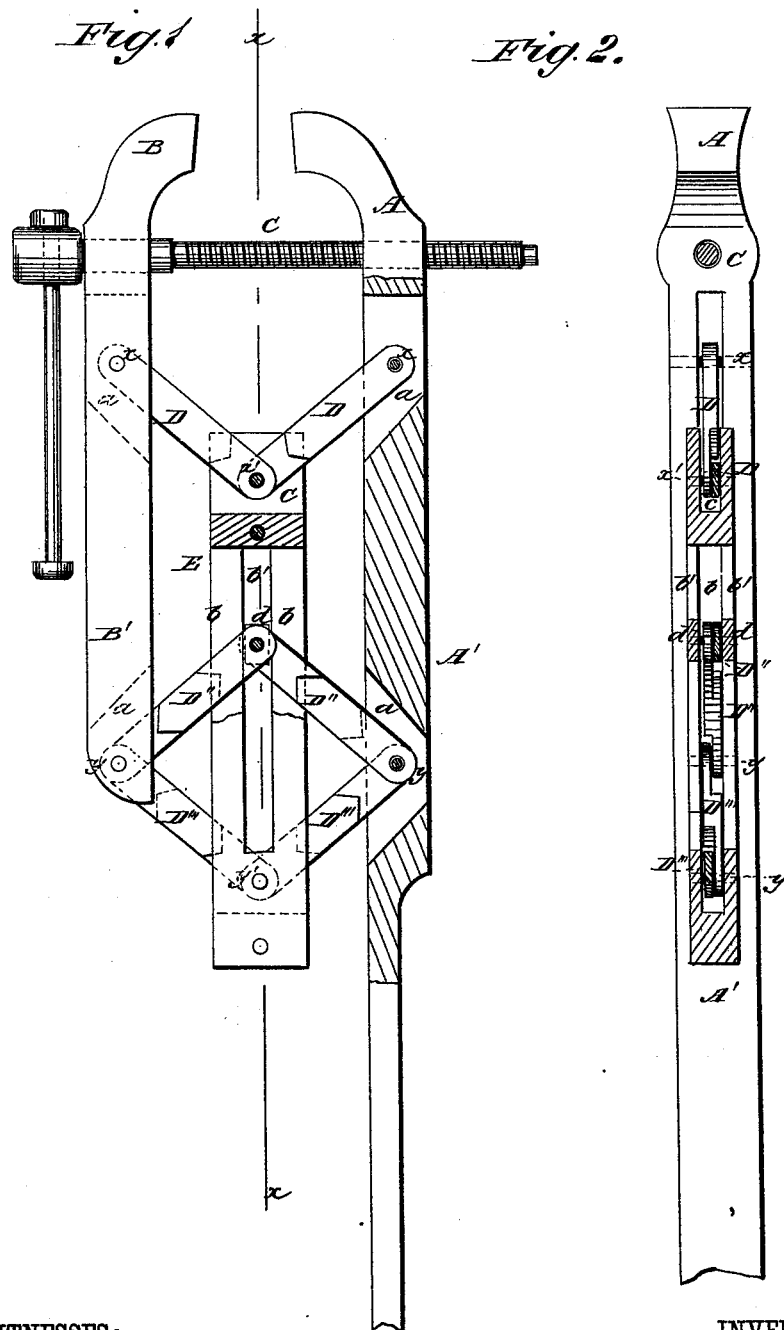


N. P. RINGSTAD.
Parallel Vise.

No. 221,611.

Patented Nov. 11, 1879.



WITNESSES:

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UNITED STATES PATENT OFFICE.

NIELS P. RINGSTAD, OF MANKATO, MINNESOTA.

IMPROVEMENT IN PARALLEL VISES.

Specification forming part of Letters Patent No. **221,611**, dated November 11, 1879; application filed April 1, 1879.

To all whom it may concern:

Be it known that I, NIELS P. RINGSTAD, of Mankato, in the county of Blue Earth and State of Minnesota, have invented a new and Improved Parallel Vise, of which the following is a specification.

The object of this invention is to provide devices for securing a parallel motion of the jaws of a vise in opening and closing the same.

It consists in connecting the jaws with links pivoted to a central slotted guide in which a traveler is held and pivoted to one pair of the links, whereby, when the jaws are screwed open or shut, the links, turning on their pivots, compel the moving jaw to move in a line parallel to the stationary jaw.

In the accompanying drawings, Figure 1 is a side elevation of the vise, in which one of the jaws is in vertical section, and Fig. 2 is a vertical section on line *xx* of Fig. 1.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A is the stationary jaw, having leg A'. B is the movable jaw, with leg B', and C is the operating-screw. In opposite faces of the legs A' B' are made transverse slots *a*, widened out toward the inside. In the upper slots are pivoted one end of links D at *xx*, and in the lower slots are pivoted the ends of links D'' and D''' at *yy*, both being joined to the same pivot.

E is the central guide, provided with transverse longitudinal slots *b b'* at right angles to each other, and at the top with a mortise, *c*, at right angles to slot *b'*. The links are passed into the mortise *c* and slots *b*, links D being pivoted together and to the guide at *x* in the

mortise, while links D''' are pivoted in the same way at *y'* in the lower part of slot *b*, while the ends of links D'' are pivoted to the traveler *d*, held in the slot *b'*, and moving up and down therein. All the links are of precisely the same length, and the distance between their pivotal points in the guide *x' y'* is the same as the distance between the points *xy* in the legs of the vise.

The operation of the device is simple and efficient. As the jaws are screwed in or out the links turn on their pivots, and at the same time raise or lower; as the case may be, the guide E, whereby the movable jaw B and its leg are thrown out or drawn in in parallel lines, thus avoiding binding, and causing the jaws to close squarely on the object to be held. At the same time the traveler *d* moves up and down in slot *b'*, and the links D'' connected therewith steady the jaw and strengthen the connection between the jaws and the guide E.

The vise can be manufactured with or without anvil, and the screw can be incased to exclude dust, dirt, &c.

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

In combination with jaws A B, links D D'', and slotted guide E, the links D'', pivoted at *y* and to the traveler *d*, held and moving in slot *b'* in guide E, to give steadiness to the movement of jaw B in opening and closing, substantially as described.

NIELS P. RINGSTAD.

Witnesses:

TORSTEN BRUDESETH,
CHAS. BERGMARK.