(No Model.)

R. A. BREUL.

VISE.

No. 590,820. Patented Sept. 28, 1897.

Fig. 1.

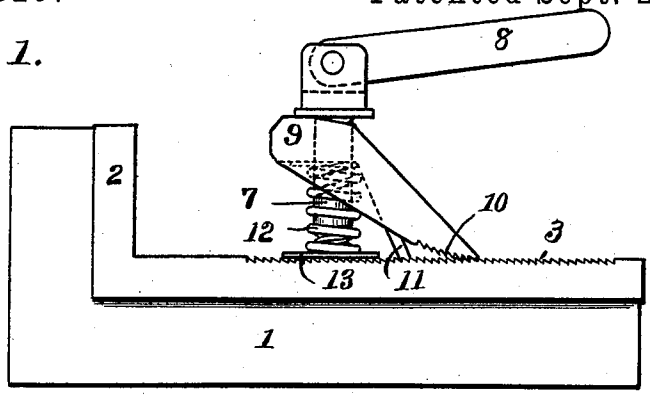


Fig. 2.

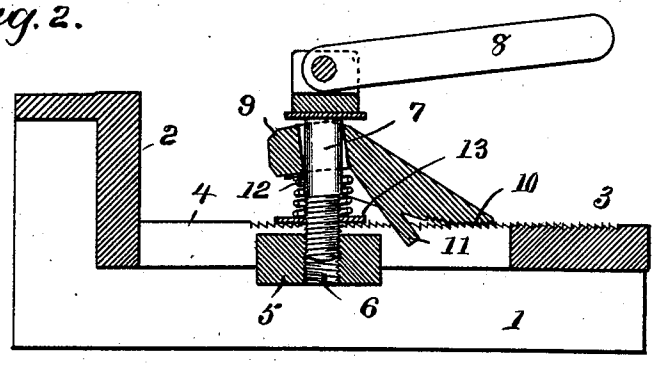
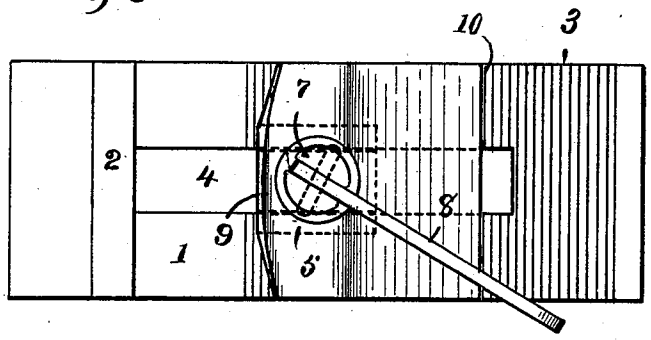


Fig. 3



WITNESS

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UNITED STATES PATENT OFFICE.

RICHARD A. BREUL, OF BRIDGEPORT, CONNECTICUT.

VISE.

SPECIFICATION forming part of Letters Patent No. 590,820, dated September 28, 1897.

Application filed April 26, 1897. Serial No. 633,846. (No model.)

To all whom it may concern:

Be it known that I, RICHARD A. BREUL, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Vises, of which the following is a specification.

This invention relates to new and useful improvements in vises or clamps such as are used upon a bench or in connection with mill or drill work.

It is the object of my invention to improve upon vises of the class specified by simplifying, strengthening, and cheapening their construction, and particularly to produce a vise which is quickly operated and forms a positive and effective clamp.

With the above objects in view I have produced the novel construction shown in the accompanying drawings, upon which similar characters of reference denote like or corresponding parts upon the several figures, and of which—

Figure 1 shows a side elevation of my novel device complete, the jaw thereof being in an open position. Fig. 2 shows a central vertical longitudinal section through my vise, the jaw of which is in a depressed or locking position. Fig. 3 is a top plan view of Fig. 1.

Referring to the numerals of reference marked upon the drawings, 1 indicates the base; 2, a vertically-extended head, and 3 a series of teeth which are run crosswise of the base, as will be later more fully explained. The base is provided with a centrally lengthwise-located longitudinal slot containing the sliding nut 5, which is in engagement with a screw 7, having a handle 8.

The screw 7, before mentioned, extends through and acts upon a clamping-jaw 9, rockably mounted upon the base. The lower curved extremity of said jaw is provided with a series of teeth 10, corresponding with and engaging those upon the base designated by 3. The clamping-jaw 9 is further provided with a guide-lug 11, which is movably fitted into the slot 4 of the base. The jaw is further provided with a coiled spring 12, which encircles the screw 7, one end thereof abutting against the under side of the jaw and the opposite end resting upon a slidable plate 13, loosely held by the screw 7, before mentioned, and moving with the same over the top of the base, the spring acting to keep the clamping-jaw with its screw in a proper elevated position when not in use.

From the above construction it will be seen that the clamping is done by the manipulation of the handle and its screw, which forces the upper end of the jaw down and inward against the head of the tool, the serrated curved end of the jaw being previously engaged by the teeth of the base. Owing to the special construction shown it will be seen that several teeth of the jaw and base are interlocked at all times no matter what the position of the jaw may be; also that the pressure exerted in the clamping operation tends to force the teeth in both the jaw and base into their own stock, thereby rendering them practically indestructible. In order to secure a piece of work in the vise, the operator raises the lower end of the jaw out of engagement with the teeth of the base and slides said jaw, together with its screw, nut, &c., a sufficient distance to receive the work, bringing the toothed end of the jaw into engagement with the teeth of the base, after which the tightening of the screw would act in a manner to force the upper end of the jaw down and inward against the work.

It is clearly apparent that any work secured in this vise is by the combined forward and downward action of the head of the clamping-jaw being firmly forced against both the upright jaw or head and the top of the base, whereby the work is brought into and positively held in a true vertical and horizontal position to the base of the vise. A great many planing and milling vises of different constructions are being made and used for thus truly securing work therein, but all contain loose jaws acting upward in the tightening operation, invariably lifting up the work contained between the two jaws, and it has to be brought to a rest on its bottom by a special operation or with blows by a hammer. My present device was constructed with a view to avoid this defect and provide a simple and cheap yet positively reliable tool for such special purposes. If required, an intermediate loose jaw may be interposed between

the clamping-jaw and the work to be secured thereby.

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

1. In a vise having a base provided with a fixed jaw and ratchet-teeth, the combination therewith of a rocking loose jaw, inclined toward the fixed jaw and means to force the face of said loose jaw both downward and toward the fixed jaw.

2. A vise consisting of the base having a solid jaw, a loose slidable inclined and swinging jaw having a segmental row of teeth engaging corresponding teeth on the base of the vise and means for forcing said movable jaw downward in a course toward said fixed jaw.

3. In a vise of the class described, the combination of a base having a fixed jaw and ratchet-teeth, a loose jaw provided with a loose convex resting-surface, containing a series of teeth for engagement with corresponding teeth on the surface of the base aforesaid, said jaw being held to the base, and operated by a screw passing through it, a slot in the base and a nut under the same substantially as described.

4. A vise having a base provided with a fixed jaw, a loose rocking jaw inclining from the base toward the solid jaw, means to hold and retain said loose jaw in any desired position on the base, a screw for forcing its operative face simultaneously toward the fixed jaw and base of the vise, substantially as described.

5. A vise having a base provided with a fixed jaw, a movable loose jaw inclining upward and toward the fixed jaw, and adapted to be forced toward said fixed jaw by means of a screw provided with a nut sliding in the base and held in balance and against the head of said screw by a spring, substantially as described.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 16th day of April, A. D. 1897.

RICHARD A. BREUL.

Witnesses:
C. M. NEWMAN,
CHAS. A. BREUL.