(No Model.)

A. MONTANT.

VISE.

No. 347,365. Patented Aug. 17, 1886.

Fig. 1

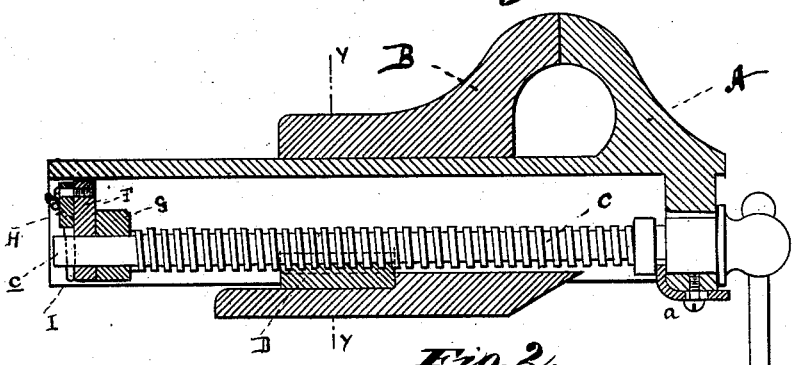


Fig. 2.

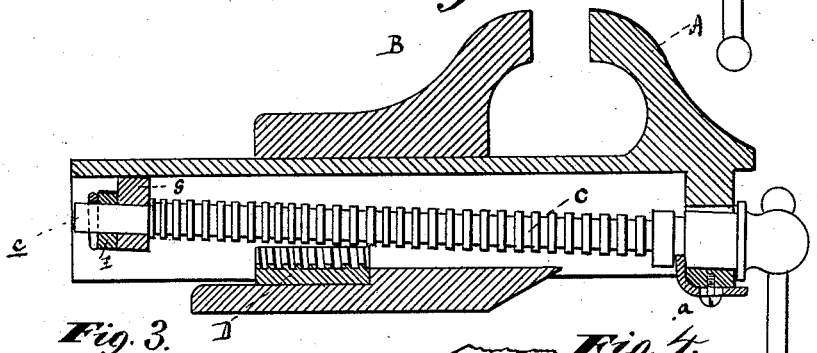


Fig. 3.

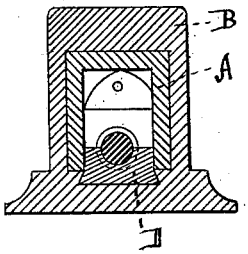


Fig. 4.

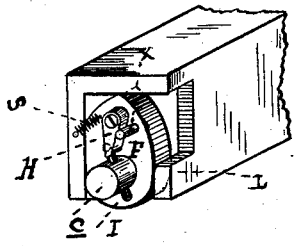


Fig. 5.

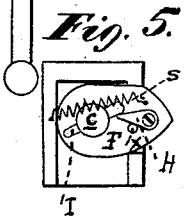


Fig. 6.

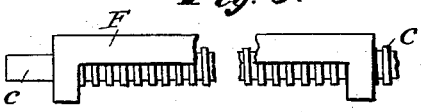
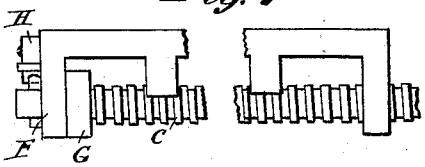


Fig. 7.



WITNESSES.

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ALPHONSE MONTANT, OF NEW YORK, N. Y.

VISE.

SPECIFICATION forming part of Letters Patent No. 347,365, dated August 17, 1886.

Application filed December 18, 1885. Serial No. 186,086. (No model.)

To all whom it may concern:

Be it known that I, ALPHONSE MONTANT, of New York, in the county and State of New York, have invented a new and useful Improvement in Vises, of which the following is a specification.

My invention relates to that class of vises in which when the parts are in a certain position the movable jaw is free to slide toward or from the stationary jaw. Vises of this description, as heretofore made, have either a limited gathering motion; or the same amount of motion made toward the stationary jaw must be made from said stationary jaw before the parts can be unlocked; or the handle is not used in the ordinary axial manner; or a separate locking and unlocking device is used in addition to the gathering or screwing, necessitating two hands or two distinct motions or operations. All these objections are overcome by the following combination, by which the screw acting on a half-nut operates a forward movement of the movable toward the stationary jaw when the screw is revolved to the right; but when the screw is turned to the left the hold on the object is released, and by means of the lifting device the screw is immediately separated from the half-nut, thus unlocking the parts and allowing of the free sliding of the jaw. The gathering motion is limited only by the length of the screw, and the separation of the parts is always effected in about one-half a turn of the handle to the left.

I will now show my invention in the best manner in which I have obtained the desired result, having adapted it to an ordinary parallel-jaw vise.

In the drawings similar letters refer to similar parts.

Figure 1 is a side view, showing the parts locked. Fig 2 shows the parts unlocked. Fig. 3 is a sectional view, as through at *y y* in Fig. 1. Fig. 4 is an oblique view, showing the parts locked, as in Fig. 1; Fig. 5, a back view, showing the parts unlocked, as in Fig. 2. Figs. 6 and 7 are strengthening parts to be further described.

In Fig. 1, A is the movable, and B the stationary, jaw. C is the screw, held at *a* in any suitable manner, the opeing for it in the head of jaw A being of such shape as to allow of its position as in Fig. 2. D is a half-nut attached to the stationary jaw. G is a guiding-nut, which fits snugly against the sides of the box part of jaw A, to keep the screw in the center over the half-nut.

In Fig. 4 the end of the screw is shown as *c*, having through it the pin I. The locking and lifting piece F fits loosely on the end of the screw, its upper end here pressing under the end of the slide in jaw A, and thus keeping the screw down on the half-nut. On F is hung the oscillating piece H. A part of the box is cut out to make the ledge L, on which F rests during the operation to be described. S is a spring which draws and holds F in position. The action is as follows: Assuming the parts to be as shown in Fig. 1, to unlock, the screw is turned to the left, when the pin in the end of said screw comes in contact with H, which, being prevented from lifting by the pin *x*, attached to F, forces said F axially down on ledge L, when, acting as a lever, F raises the screw, freeing it from the half-nut, as shown in Figs. 5 and 2. An object being now placed between the jaws, A is pushed against it. The screw is now turned to the right and pressure being released on the parts forming the lifting device, the spring S draws F toward position shown in Fig. 4. If, however, it happens that the threads of the screw do not instantly fit in with those of the nut, the end of F is not drawn under the upper side of the slide until a part of a turn of the screw brings the threads in their proper corresponding position. When this is accomplished and the parts locked, F is in the position shown at Fig. 4. Comparing Figs. 4 and 1, it will be seen that the parts are then perfectly locked, the screw being held at either end, and down in contact with the half-nut. It is clear that any further turn of the screw to the right will tighten the grip on any object held between the jaw, and the locking part is not disturbed, as the pin I in its revolutions lifts the pawl H. The pawl H then falls again in position. It is advantageous to make this pawl rather long, as after it has been lifted by I and again falls in position, if it is desired to unlock, a part of a revolution must be made to the left before the pin I comes in contact with H. This is suffi-

cient to release the strain on the threads of the screw and half-nut, and the screw can then be easily raised from the nut.

If it is thought that in some cases there may be in the screw a tendency to bend, on account of the use of a half-nut, the strengthening-piece, as shown in Fig. 6, can be used. Its shape is clearly shown in the drawings. It would take the place of the guiding-nut G, as it fits snugly to the sides of the slide close to the top of the screw, and is of such thickness as to allow over it space for the raising of the screw.

In Fig. 7 is shown how a locking-piece, of which F would be a part, can be made the whole length of the slide, and being cone shape on top, with branches resting on the top of the screw, and all its upper surface pressing, when the parts are locked, on the ceiling of the slide to keep the screw in contact with the nut. When this piece is used, the slide must be made correspondingly wide, and a ledge placed inside of said slide, on which F will rest when the raising of the screw is being performed.

I do not mean to confine myself to the use of the locking and lifting device precisely as described. I can, for instance, use a cam instead of the piece F, and dispense with the ledge, and instead of pins I and *x* and pawl H, I can use such a device as is found in stem-winding watches, which operates only when turned to the right. Then the spring need not necessarily be attached in the position shown. Neither need it be a spiral spring, as long as it performs its object of quickly drawing the parts in position. The lower part of F can even be weighted and gravitation alone do the work; but I prefer the use of the spring. Then, also, by having the half-nut on a movable base the relation between the screw and the half-nut can be reversed, the screw being held at either end of the movable jaw in immovable bearings, and its action, when turned to the left, causing a depression of said half-nut.

What I claim, and desire to have Letters Patent granted for, is—

1. In combination, the movable jaw of a vise, its screw carrying a combined lifting and locking device, a pin on the screw, which operates said device with less than one turn of the screw, and only to the left, a ledge, and a half-nut attached to the stationary jaw, as set forth.

2. In combination, the stationary jaw of a vise, its half-nut, the movable jaw, its screw carrying a combined locking and lifting device operated by the pin on the screw in less than one turn of the screw, and only to the left, a ledge, and a restoring-spring, as set forth.

3. In combination, the stationary jaw of a vise, its half-nut, the movable jaw, its screw carrying a combined lifting and locking device consisting of piece F, pawl H, arresting-pin *x*, the pin of the screw which operates in less than one turn of the screw, and only to the left, and a ledge, as set forth.

4. In combination, the stationary jaw of a vise, its half-nut, the movable jaw, its screw carrying a combined lifting and locking device, the pin on the screw, and a guiding-nut, G, as and for the purpose set forth.

5. The combination, with the stationary jaw of a vise carrying a half-nut, of the movable jaw carrying a screw having a combined locking and lifting piece, a pin, and a strengthening-piece, substantially as described, for the purpose set forth.

6. In combination, the stationary jaw of a vise, its half-nut, the movable jaw, its screw carrying a combined lifting and locking piece extending the entire length of the slide, means by which the action of said piece is controlled by a pin on the screw only when the screw is turned to the left, and in less than one turn, and a ledge, as and for the purpose set forth.

ALPHONSE MONTANT.

Witnesses:
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A. H. LASCE.