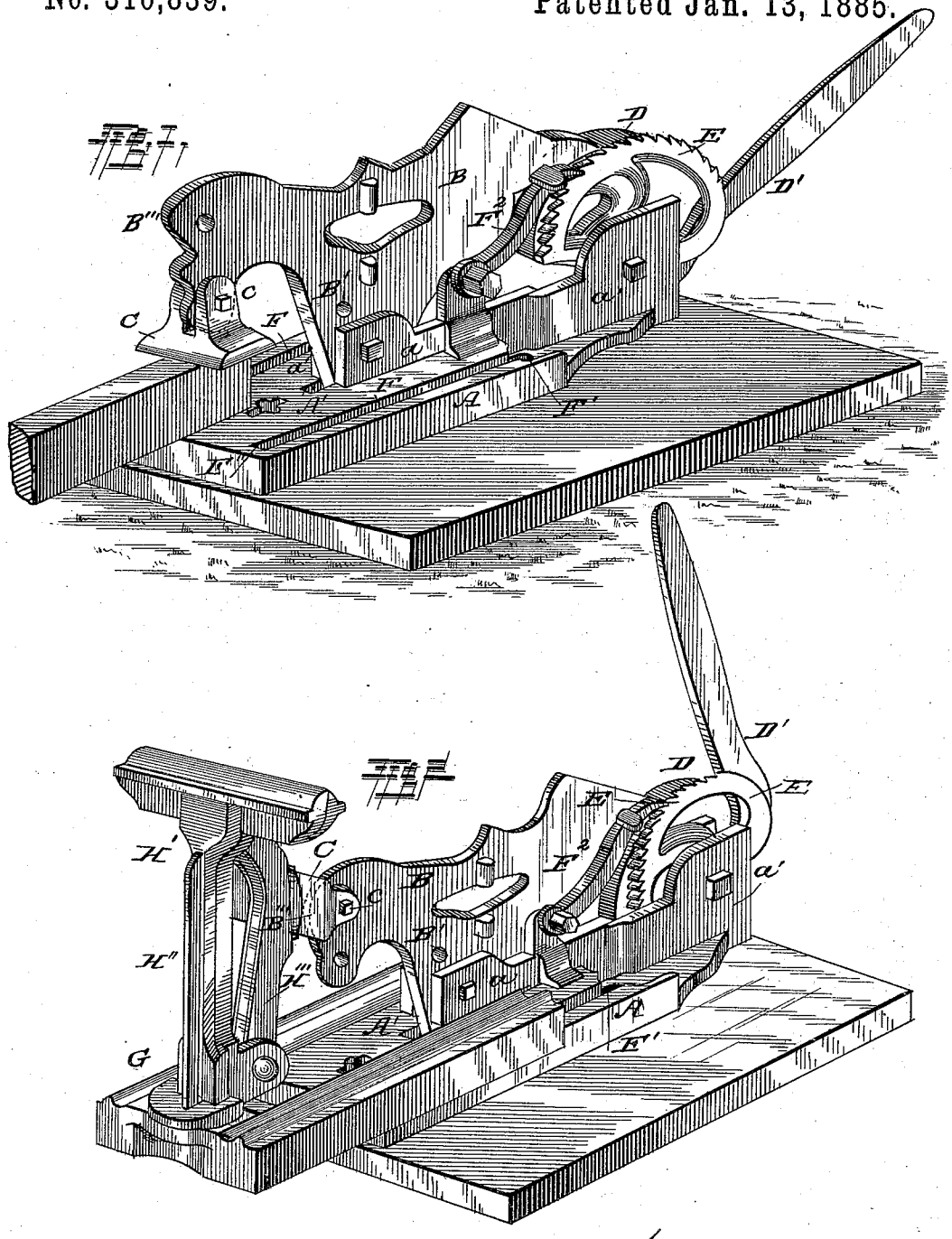
(No Model.) 2 Sheets—Sheet 1.

W. MICKEL.

BENCH VISE.

No. 310,839. Patented Jan. 13, 1885.



WITNESSES:

Fred. G. Dieterich.

Geo. Fecher

William Mickel
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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

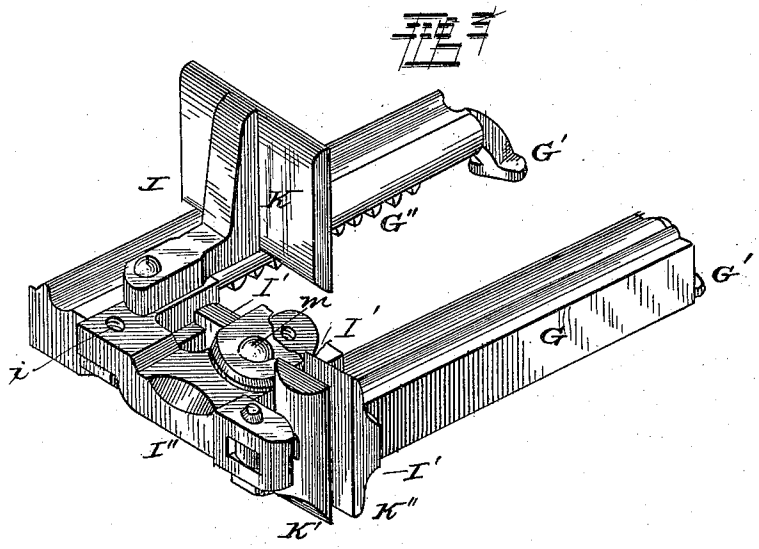
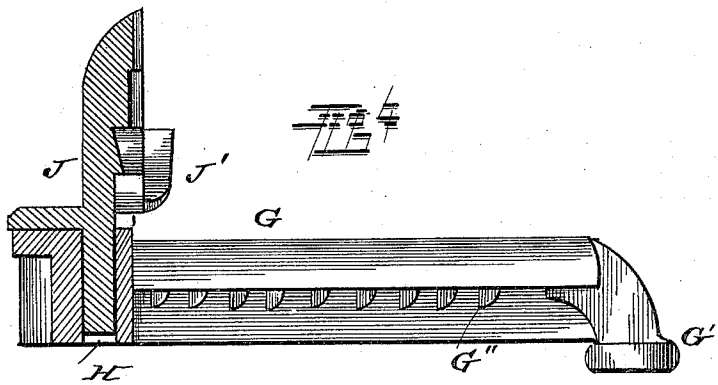
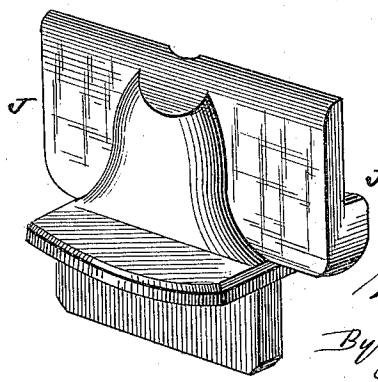


Fig. 4.





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UNITED STATES PATENT OFFICE.

WILLIAM MICKEL, OF ONEONTA, NEW YORK.

BENCH-VISE.

SPECIFICATION forming part of Letters Patent No. 310,839, dated January 13, 1885.

Application filed April 26, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MICKEL, a citizen of the United States, and a resident of Oneonta, in the county of Otsego and State of New York, have invented certain new and useful Improvements in Bench-Vises; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved vise. Fig. 2 is a similar view showing the adjustable carriage placed upon the bed-plate of the vise in its operative position, with one form of stationary jaws secured upon the said carriage; and Figs. 3 and 4 are perspective detail views of the adjustable carriage, showing different forms of jaws which may be used thereon.

Similar letters of reference indicate corresponding parts in all the figures.

My invention consists in the improved construction and combination of parts of a vise, as will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings, A represents the bed-plate of the vise, which is provided with a central longitudinal slot, A′, and upwardly-projecting standards *a* and *a′*.

B indicates an arm or lever, which is provided at its lower portion with a series of apertures, B′, to adapt it to be adjustably secured between the central standards, *a*, of the bed-plate. Upon the front end of this arm B is pivotally secured, by means of a suitable bolt or pivot, *c*, a jaw, C, which, when secured in the position shown in Fig. 1 of the drawings, will close down vertically upon any object placed beneath it upon the bed-plate. The rear end of the arm C is adapted to bear upon the upper periphery of a cam, D, which is pivoted eccentrically between the rear standards, *a′*, of the bed-plate, and which is provided with an operating lever or handle, D′. Upon one side of this handle D′ is secured a curved rack, E, while upon the bed-plate A is pivotally secured a pawl, F^2, adapted to engage with the teeth of the curved rack E, by which means the lever and cam are secured in their adjusted position. It will be seen that when the handle of the cam D is thrown back or depressed the rear end of the pivoted arm B is elevated, thereby depressing the front end of the same, so as to lock firmly between the forward part of the bed-plate and the movable jaw C any object which may be placed in that position. The bed-plate is provided on each side with longitudinal slots F F, the rear ends of which are enlarged at F′, while the forward ends of the said slots run sufficiently near the front edge of the bed-plate to form the strips or teeth F″, for the purpose hereinafter specified.

G indicates the movable and adjustable carriage, the construction of which will be more readily understood by reference to Figs. 3 and 4 of the drawings. This carriage is provided at its rear ends with the projections G′, enlarged at their lower ends, the said ends fitting within or passing through the enlarged rear ends of the slots F F, and then passing underneath the said slots, by which arrangement the carriage is firmly locked in its adjusted position. The side pieces of the carriage are provided on their lower sides with the downwardly-projecting teeth G″, adapted to engage with the forward teeth, F″, of the bed-plate, by which means the carriage may be adjusted back or forth, as desired. The front end of the carriage is provided with a vertical transverse slot, H, adapted to receive the lower ends of any of the attachments H′ I J.

The attachment H′, which is more particularly adapted for use in saw-filing, and which is shown in operative position in Fig. 2 of the drawings, consists of the rigid jaw H″ and the hinged or movable jaw H‴. In operating this attachment the hinged jaw C is secured to the front end of the arm B by passing its bolt through the upper aperture in the front end of the said arm, when the lower edge of the said jaw will bear upon a shoulder, B‴, being thereby secured in a position at right angles to that shown in Fig. 1 of the drawings. It will be seen that the hinged jaw C will bear against the rear side of the hinged arm H‴ of the attachment H′, whereby the said hinged arm may be opened or closed, as desired.

The attachment I, which is shown in de-

tail in Fig. 3 of the drawings, consists of the stock or rigid portion I′ and the hinged portion I″, which is pivotally secured upon the part I′, being provided at its inner end with a pivoted vertical jaw, K, which receives pressure direct from the hinged jaw C, and at its outer end with a smaller hinged vertical jaw, K′, between which and the fixed jaw of the rigid portion I″ the object to be operated upon is held. It will be seen that by hinging the smaller holding-jaw K′ of the hinged portion I″, the faces of the two holding-jaws, K′ and K″, will always stand parallel or true to each other, which would not be the case if both of the said jaws were made rigid. The end of the hinged portion I″, to which the larger jaw, K, is secured, is provided with a series of apertures, *i*, by which arrangement the said jaw may be moved backward or forward, as desired, whereby the width to which the jaws K′ and K″ will open may be regulated. The hinged portion I″ is itself secured adjustably to the fixed portion I′ for the same purpose.

J indicates a large vertical jaw, which is shown in detail in Fig. 4 of the drawings, and which is provided near the lower edge of its operative face with the flanges or projections J′, which prevent the work being operated upon from slipping down, as would otherwise be the case.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of my improved vise and its attachments will be readily understood without requiring further explanation.

It will be seen that my improved vise and its attachments are simple in construction, and are therefore not liable to break or get out of order.

By constructing the carriage in the manner described it may readily be moved back or forward, according to the thickness of the object placed between the operating-jaws of the attachment which is being used at the time.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. As an improvement in vises, the combination of the bed-plate, provided with a central longitudinal slot and upwardly-projecting standards, between which the operative portions of the vise are pivotally secured, a pivoted vertically-adjustable arm or lever provided at its forward end with a pivoted jaw adapted to be secure in such positions as to exert either a downward or lateral pressure, an eccentrically-pivoted cam provided with an operating-handle, and having secured upon one of its sides a curved rack, and a pawl adapted to engage with the teeth of the said rack, whereby the operative portions of the vise are held firmly in their operative positions, as and for the purpose shown and set forth.

2. As an improvement in vises, the combination of the bed-plate, provided near each side with longitudinal slots the rear ends of which are enlarged, while their forward ends are extended so near the forward end of the bed-plate as to form or leave two narrow strips or teeth at the front edge of the bed-plate, and further provided with a central longitudinal slot and upwardly-projecting standards, between which the operative portions of the vise are pivotally secured, a pivoted vertically-adjustable arm or lever provided at its forward end with a pivoted jaw adapted to be secured in such positions as to exert either a downward or lateral pressure, an eccentrically-pivoted cam provided with an operating-handle, and having secured upon one of its sides a curved rack adapted to be engaged by a suitable pawl, an adjustable carriage provided at its rear ends with downwardly-curved projections enlarged at their lower ends, and having its side pieces provided with downwardly-projecting teeth adapted to engage the teeth on the forward edge of the bed-plate, and provided at its forward end with a vertical slot adapted to receive and hold in operative position any of the attachments H′ I J, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

3. In a vise of the described construction, the combination, with the adjustable carriage, of the attachment H′, consisting of the rigid jaw H″ and the hinged or movable jaw H‴, constructed and arranged to operate substantially in the manner and for the purpose shown and described.

4. In a vise of the described construction, the combination, with the adjustable carriage, of the attachment I, consisting of the rigid portion I′ and adjustably-pivoted portion I″, having the adjustably-pivoted vertical jaw K, and a smaller hinged vertical jaw, K′, all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

5. In a vise of the described construction, the combination, with the adjustable carriage, of the vertical jaw J, provided near the lower edge of its operative face with the flanges or projections J′, constructed and arranged to operate substantially in the manner and for the purpose shown and described.

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

WILLIAM MICKEL.

Witnesses:
WILLIAM PATTERSON,
M. L. KEYS.