

A. H. BRAINARD.

WISE.

No. 169,516.

Patented Nov. 2, 1875.

Fig. 1.

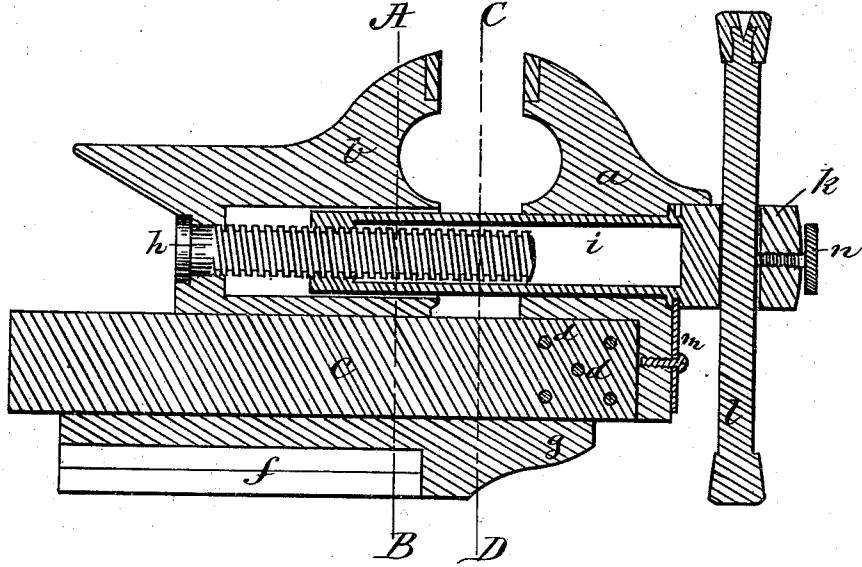


Fig. 2.

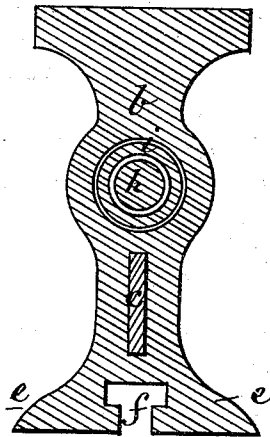
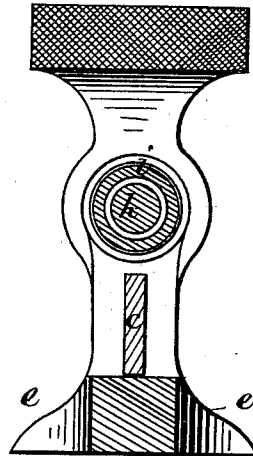


Fig. 3.



WITNESSES:

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INVENTOR:

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by Alvan Andren.
his atty.

UNITED STATES PATENT OFFICE.

AMOS H. BRAINARD, OF HYDE PARK, MASSACHUSETTS.

IMPROVEMENT IN VISES.

Specification forming part of Letters Patent No. **169,516**, dated November 2, 1875; application filed April 1, 1875.

To all whom it may concern:

Be it known that I, AMOS H. BRAINARD, of Hyde Park, in the county of Norfolk and State of Massachusetts, 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 thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification:

My invention relates to improvements in bench-vises; and consists of an elastic steel bar of great vertical extension in proportion to its thickness, which is cast in one piece with the base of the movable front jaw, and made to move freely through a corresponding slot in the rear jaw. The movable jaw is operated by means of a rotary screw-sleeve having a bearing in the movable jaw, which screw-sleeve encompasses a stationary screw-threaded shaft secured to the stationary rear jaw, as will now be more fully shown and described.

On the accompanying drawing, Figure 1 represents a central longitudinal section of my invention. Fig. 2 represents a cross-section on the line A B, shown in Fig. 1, and Fig. 3 represents a similar cross-section on the line C D, also shown in Fig. 1.

Similar letters refer to similar parts wherever they occur on the drawings.

a represents the front jaw, and *b* is the rear jaw, of my invention. To the base of the front jaw *a* is cast the elastic steel bar *c*, that is for this purpose provided with perforations *d d*, as shown in Fig. 1. The elastic steel bar *c* is made to slide forward and back during the operation of the vise, in a corresponding slot made in the rear jaw *b*. The base of the rear jaw *b* is provided with projecting lips *e e*, by which and suitable bolts the vise can be easily secured to the work-plate of a planing or shaping machine. A T-headed groove, *f*, is made through the middle of the base of the rear jaw, as shown, into which a T-headed bolt is slipped, by means of which the vise is attached to the bench in the usual way. *g* represents the lip or projection that is cast in one piece, with the base of the rear jaw *b* serving as an additional support for the bar *c*. *h* represents the screw-shaft that is firmly

secured to the rear jaw *b*. A sleeve, *i*, is provided in its rear end with a female screw-thread encompassing the shaft *h*, as shown, and is arranged so as to be turned freely around its axis in a bearing in the front jaw *a*. The sleeve *i* extends in front of the jaw *a*, and has a head, *k*, through which the handle *l* passes in the ordinary way. A stationary plate, *m*, fitting in a groove on the head *k* prevents lateral motion of the sleeve *i* in the jaw *a*, as usual. *n* represents a small thumb-screw, projecting through from the end of the head *k* to the handle *l*, by means of which I am able to confine the handle *l* in any desired position in relation to the head *k*, which is very desirable where a slight turn of the handle only is needed for the removal or placing of the work between the jaws.

The screw-shaft *h* has a very short bearing in the rear jaw *b*, and sufficient play is made for the screw-threaded part of the shaft *h* in the nut of the sleeve *i*, so as to enable the elastic steel bar *c* to yield sidewise, when a tapering piece of work is secured between the jaws of the vise.

The advantage of the elastic bar *c* is that it will yield slightly in a horizontal plane, by which I am able to hold and secure slightly-tapering pieces of work firmer than where rigidly-working jaws are used.

I am aware of the patent granted to J. H. Lewis, May 28, 1867, No. 65,097, for vises; and I therefore disclaim the invention as set forth in said patent.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

1. In a bench-vise, an elastic steel bar, *c*, secured to the front jaw, and movable through a slot in the rear jaw, substantially as herein set forth.

2. In combination, the stationary jaw *b*, and screw-shaft *h*, movable jaw *a*, and its screw-sleeve *i*, and the elastic steel bar *c*, with its corresponding slot, as and for the purpose set forth.

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

AMOS H. BRAINARD.

Witnesses:

ALBAN ANDÉN,
JOHN R. HEARD.