G. B. ST. JOHN.

Combined Anvil and Vise.

No. 220,886. Patented Oct. 21, 1879.

Fig. 1.

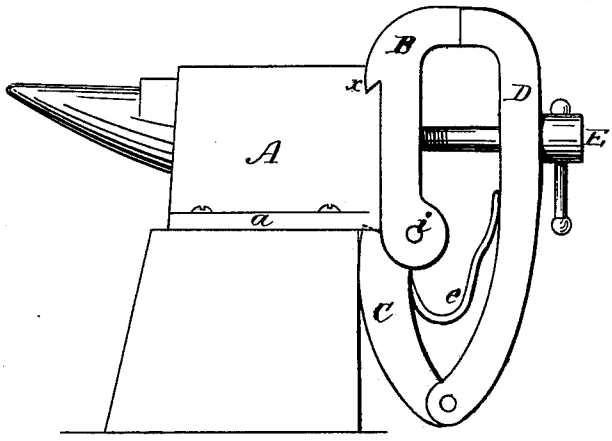


Fig. 2.

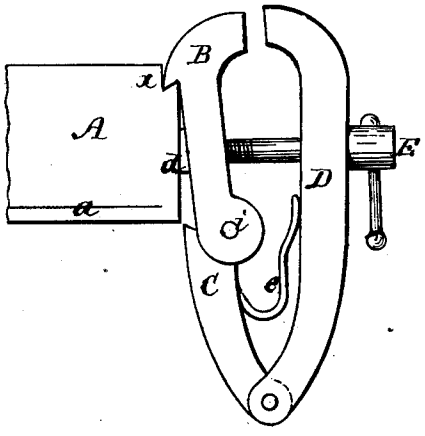


Fig. 4.

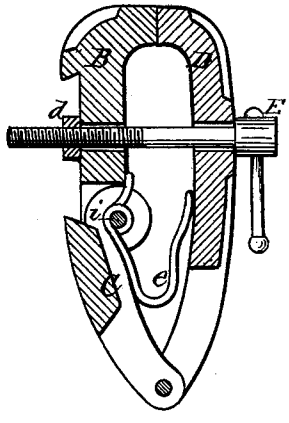
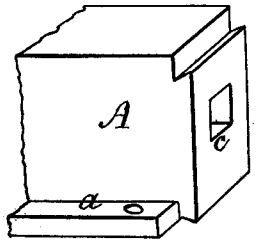


Fig. 3.



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UNITED STATES PATENT OFFICE.

GARLAND B. ST. JOHN, OF CEDAR RAPIDS, IOWA.

IMPROVEMENT IN COMBINED ANVIL AND VISE.

Specification forming part of Letters Patent No. **220,886**, dated October 1, 1879; application filed November 26, 1878.

To all whom it may concern:

Be it known that I, GARLAND B. ST. JOHN, of the city of Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Combined Anvil and Vise, of which the following is a specification.

The object of my invention is the construction of the above-mentioned device in such a manner that the vise, though rigidly secured to the anvil when in use, may be detached therefrom in an instant when desired, being accomplished without the removal of bolts, screws, or any similar fastening means.

It further consists in so arranging the socket for the main nut that the latter is not dependent on the vise-jaw to prevent its turning, nor liable to slip back into the anvil and, becoming separated from the screw, necessitate the removal of the anvil from the bench or block in order to place it again in proper position.

The invention consists of an anvil of the usual general outline, the large end of which is formed into a horizontal dovetailed tenon and provided with a socket for the reception of the main nut. The rear jaw of the vise is composed of two parts hinged near the center, and fastens to the anvil by means of the gripe afforded by a beveled projection on each portion of the jaw fitting the dovetail above referred to, and held in place by the simultaneous pressure upon the upper and lower extremity of the jaw as the vise is closed, as will more clearly appear by the particular description following.

In the accompanying sheet of drawings, Figure 1 represents the invention as ready for use. Fig. 2 indicates the process of disconnecting the vise and anvil. Fig. 3 is the front or face end of the anvil, showing the nut-socket; and Fig. 4, a sectional view of the vise, indicating the action of the spring.

The anvil A is in the general form of such devices, and is provided with a flange at the base, by means of which it is fastened to the bench or block. In the front or large end of the same is formed a dovetail horizontal to the anvil, as indicated in Fig. 3. A socket, *c*, is also formed in the same end, through which the main screw E passes, and in which the nut *d* is held.

The vise is composed of the outer jaw, D, made in the usual outline and designed to connect with the other jaw by a hinge at the lower end. The other and inner jaw is composed of two parts. The upper portion, B, is made to extend to near the lower side of the anvil when connected thereto. At this point an enlargement is formed for a hinge. The lower part, C, is jointed thereto, and the other extremity connects with the lower end of jaw D by a similar hinge-joint. A projection at *x* corresponds to the upper bevel of the dovetail, and a like projection on the upper end of lever C is adapted to the bevel of the under edge of the same. Through both jaws the screw E passes, and a nut, *d*, on the back side of jaw B draws them together as the screw is turned.

It will be seen that as the opposite extremities of the inner jaw are pressed in the direction of the anvil the beveled projections are forced nearer together, and closing upon the dovetail of the anvil hold it and the vise rigidly in place. When necessary to remove the latter for any purpose it is only necessary to separate the jaws for a brief distance and pull outwardly on the lower end of the vise, when the same is instantly detached.

For the purpose of assisting the weight of the outer jaw, D, in keeping the vise in its place on the anvil a spring, *e*, is coiled around the fulcrum-pin *i*, its opposite limbs resting on the respective parts of the inner jaw, as seen in Fig. 4. The lower part of the spring is also bent upwardly, and bearing against the outer jaw tends to effect the further purpose—viz., to throw them apart as the screw is retracted.

The nut *d* is kept from turning by being placed in the socket *c* formed in the front end of the anvil. This socket may be so formed as to prevent the nut from slipping through it and into the anvil in case the screw should be entirely withdrawn. Being made wholly in the anvil the jaw is not weakened, as it would be by forming a socket therein. At the same time a good bearing-surface is presented to the nut, while the danger of its becoming detached from the screw is slight, as the effect

of the spring *e* is to hold it firmly in position while the screw is taken out.

The advantage arising from the ease and quickness with which the vise is removed from the anvil constitutes a great point of superiority over all like devices known to the inventor. It is often necessary to detach the vise for the purpose of hammering large bodies on the anvil. To be able to do so without the vexatious delay incident to unscrewing bolts or screws, or driving out wedges, cannot fail to recommend this invention above all others.

I am aware that there is now in existence a combined anvil and vise connected by means of bolts, the recess for the main nut of which is partly in the vise-jaw and partly in the end of the anvil, and lay no claim thereto. The socket in the end of my anvil is intended to keep the nut from turning with the main screw, and is therefore fitted closely to the nut. The recess in the invention above referred to might be round or any other form, and still answer fully all its requirements. In my invention it is indispensable that the sockets conform to the shape of the nut. The object of the recess in the one case and the socket in the other being ascertained, the novelty and utility of my invention will at once be apparent.

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

1. The combination of a vise having a hinged jaw provided with a suitable shoulder or lug on each of its hinged parts with an anvil having corresponding recesses formed therein in its end, substantially as described.

2. The double-acting spring *e*, in combination with a hinged jaw and a hinged part of a rigid vise-jaw, substantially as described.

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Witnesses:
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