(No Model.)

J. O. BARRETT.

IRON VISE.

No. 453,793. Patented June 9, 1891.

Fig. 1

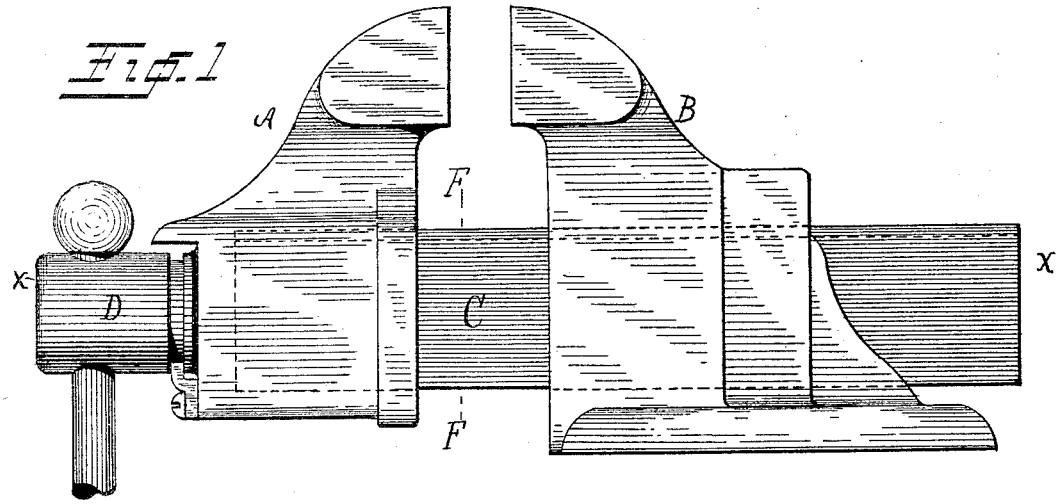


Fig. 2

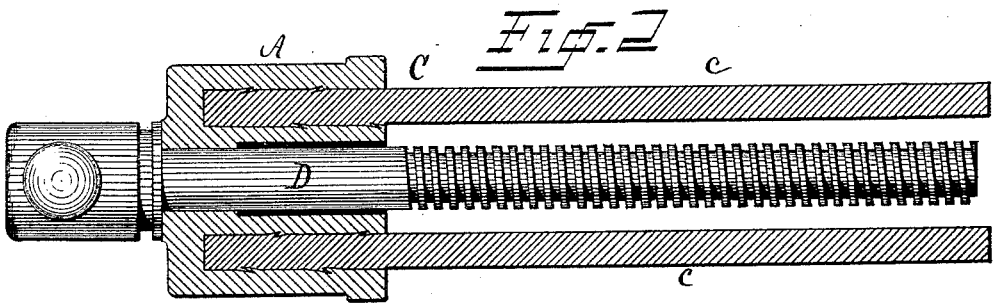
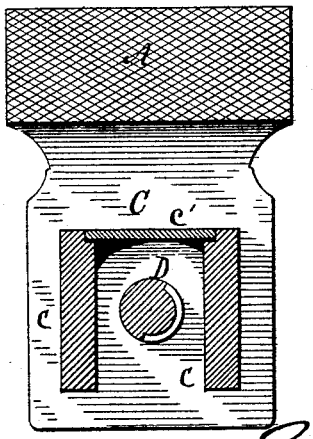


Fig. 3



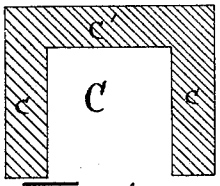


Fig 4

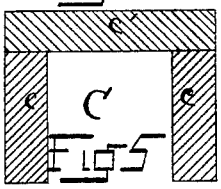


Fig 5

Witnesses
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UNITED STATES PATENT OFFICE.

JAMES O. BARRETT, OF MEADVILLE, PENNSYLVANIA.

IRON VISE.

SPECIFICATION forming part of Letters Patent No. 453,793, dated June 9, 1891.

Application filed October 9, 1890. Serial No. 367,493. (No model.)

To all whom it may concern:

Be it known that I, JAMES O. BARRETT, a citizen of the United States, residing at Meadville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Iron Vises; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to vises; and it consists in certain improvements in the construction thereof, as will be hereinafter fully set forth, and pointed out in the claims.

The invention relates particularly to the construction of the movable jaw and bar of iron vises.

The object of the invention is to form the movable jaw of cast metal and the bar of parallel bars of wrought metal, upon which the cast metal forming the jaw is molded, said bars being so disposed as to give the greatest possible strength and firmness and also perfectly house and protect the screw.

The invention is illustrated in the accompanying drawings, as follows:

Figure 1 is a side elevation of a vise embodying the invention. Fig. 2 is a horizontal section through the movable jaw and bar on the line $x\ x$ in Fig. 1. Fig. 3 is a transverse vertical section through the bar on the line $y\ y$ in Fig. 1. Figs. 4 and 5 are transverse vertical sections of bars of alternative construction.

A marks the movable jaw; B, the fixed jaw; C, the bar; D, the screw, and $c\ c\ c'$ the parts of which the bar C is composed.

In Figs. 1, 2, and 3 the bar C is shown composed of two parallel bars $c\ c$, set on edge, and a thinner horizontal bar c', which is parallel with the bars $c\ c$ and laid so as to form a coping over the screw.

In Fig. 4 the three parts $c\ c$ and c' are shown as formed of one piece, and in Fig. 5 they are shown as separate pieces, as in Fig. 1, but of slightly different form.

I am aware that heretofore vises have been made with the bar of the movable jaw formed of bars of wrought metal with the jaw A cast upon them; but the two bars forming the main bar were placed horizontally, one above and the other below the screw. Such a construction, while it partially protects the screw, does not dispose the metal so as to give the greatest possible strength and stiffness, nor does it properly house the screw and protect it from filings and scales which fall from the metal worked upon in the vise. It will be observed that the force exerted by the jaw A in gripping any object acts upon the bar C vertically, and to give that bar the greatest possible strength and stiffness is essential, and this can be done with the least material when the bars $c\ c$ are placed on edge, as shown; but when thus placed the screw would be unprotected without the third or coping bar c' is added. The two bars $c\ c$ must be firmly connected with the jaw A; but the coping-bar c' need not necessarily be so attached.

In Fig. 2 the two bars $c\ c$ are shown with the jaw A cast upon them. This operation need not be described, as it is a common practice in the art to place bars of wrought metal in the mold and pour the molten cast metal upon them.

As shown in Fig. 3, the coping-bar c' may be unconnected with the jaw A.

As shown in Fig. 5, it is intended that the bar c' shall be placed in the mold with the bars $c\ c$ and the jaw A be cast upon them.

As shown in Fig. 4, the parts $c\ c$ and c' are formed of a single piece of metal. This construction is the preferable one in many respects; but it is the most expensive. To effect it in the best manner, a rectangular U-shaped bar will be rolled or drawn in specially-formed rolls or dies, and from it sections of proper length will be cut.

The material used for the parts $c\ c$ and c' should preferably be cold-rolled or cold-drawn steel, except the part c', when made as in Fig. 3, may be of inferior material.

What I claim as new is—

1. As an article of manufacture, a vise hav-

ing the bar C of its movable jaw formed of the parts *c c* and *c'*, of wrought metal, arranged relatively to each other and to the screw D, as set forth.

2. As an article of manufacture, a vise having the bar C of its movable jaw formed of the parts *c c* and *c'*, arranged relatively to each other and to the screw, as shown, and formed of a single piece of wrought metal, upon which the jaw A is cast.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES O. BARRETT.

Witnesses:
JNO. K. HALLOCK,
WM. P. HAYES.