

J. BANNISTER.
CLAMP FOR MOLDERS' USE.

No. 554,972.

Patented Feb. 18, 1896.

Fig. 1.

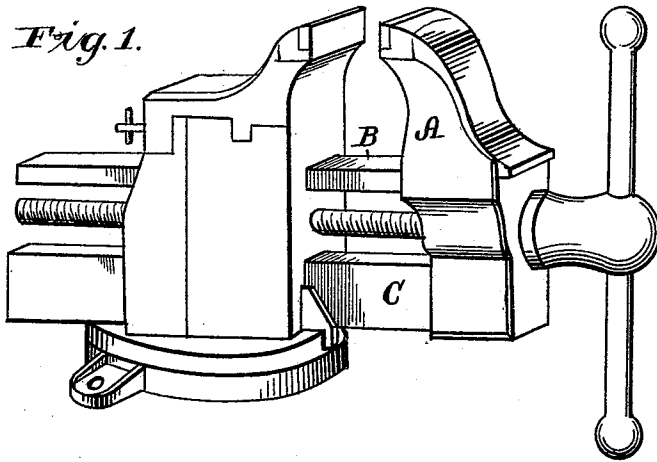


Fig. 2.

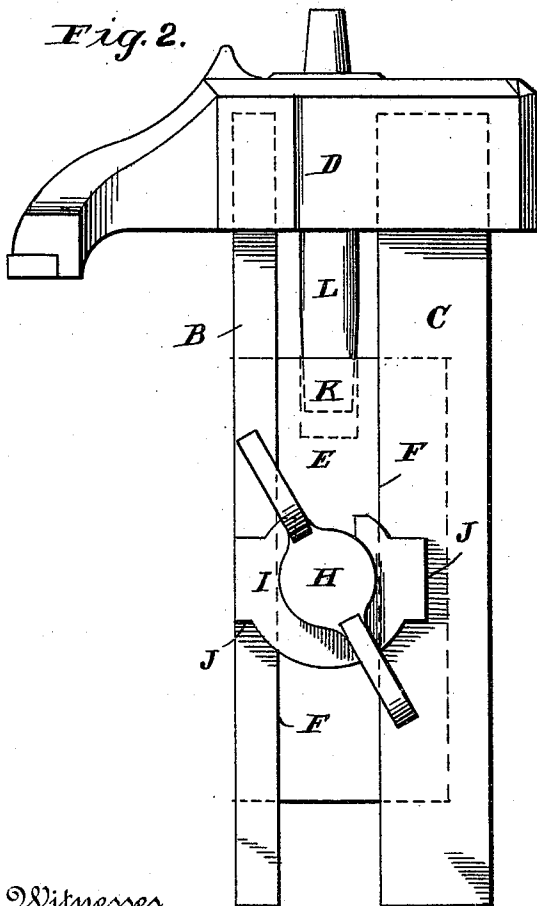
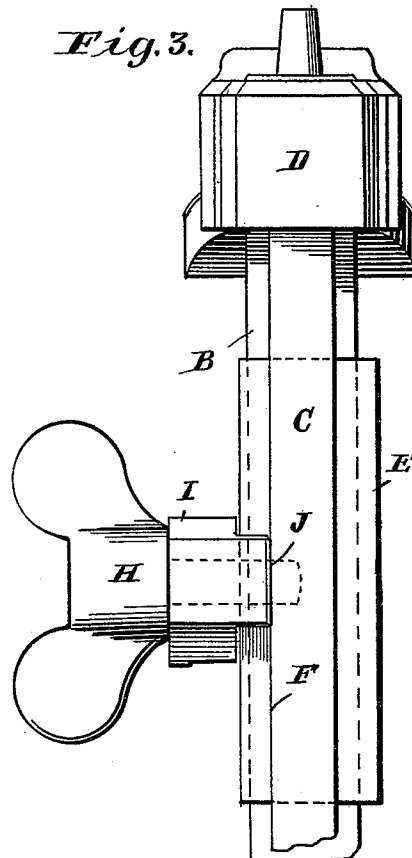


Fig. 3.



Witnesses

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Fig. 4.

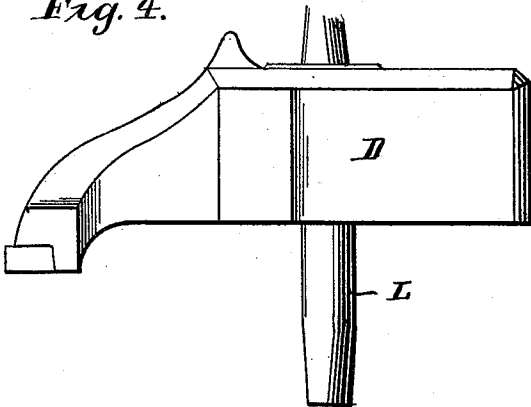
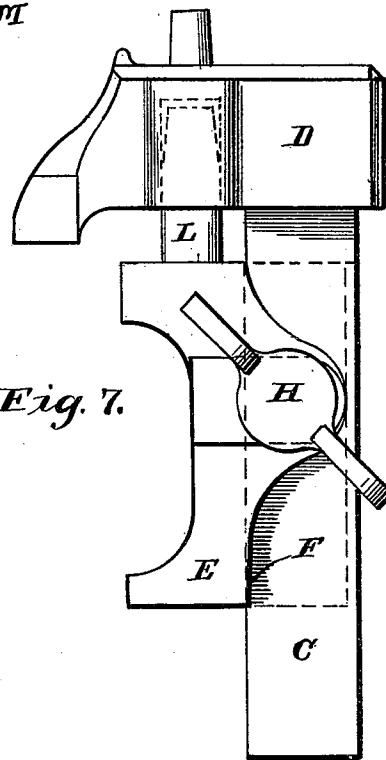
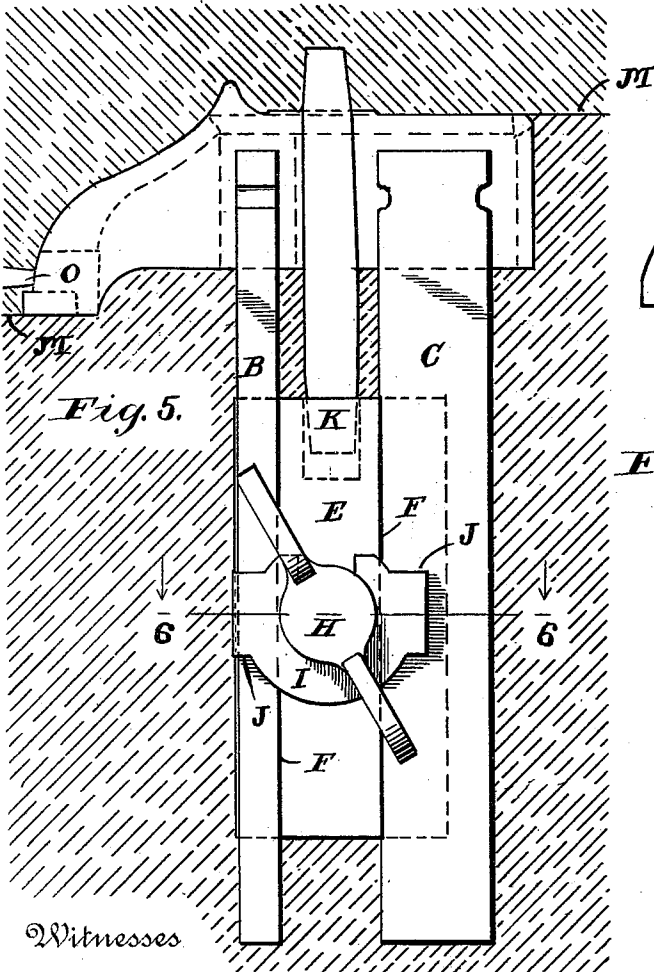
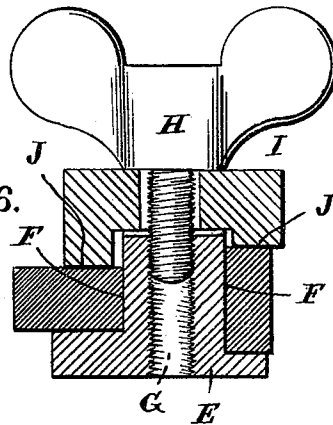


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN BANNISTER, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
COULTER & MCKENZIE MACHINE COMPANY, OF SAME PLACE.

CLAMP FOR MOLDERS' USE.

SPECIFICATION forming part of Letters Patent No. 554,972, dated February 18, 1896.

Application filed September 9, 1895. Serial No. 561,873. (No model.)

To all whom it may concern:

Be it known that I, JOHN BANNISTER, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Devices for Securing Bars in Position in a Mold, of which the following is a specification.

This invention relates to new and useful means for securing hard metallic bars in position within a mold while other metal is being cast thereto.

It is the object of my invention to provide a simple and efficient device whereby steel rods or bars may be securely held in any desired position with relation to the mold while molten metal is cast therein.

In the construction of various devices it is often desirable to form different portions of the parts thereof from different grades of metal—such, for instance, as steel and cast-iron. This is done by first properly preparing the steel pieces for said portions and then placing them in the mold in their respective proper positions, then pouring in the molten cast metal in such a manner as to engage said steel pieces, thus uniting the two.

The above manner of manufacturing is carried out in the production of vises and similar articles wherein their wearing-surfaces are formed of steel and the remaining unimportant portions are formed of cast-iron.

Upon the accompanying drawings, which form a part of this specification, the same letters of reference denote like or corresponding parts upon the several figures, and of which—

Figure 1 shows a perspective view of a vise, the front or male part of which is constructed by the assistance of my invention. Fig. 2 is a front elevation of a clamp, having the parallel bars of the front part of a vise secured therein, and also shows in connection therewith the pattern for forming the mold in which the molten metal is poured. Fig. 3 is a rear elevation of the parts shown in Fig. 2. Fig. 4 is a detached view of the pattern for the front part of a jaw, shown in Figs. 2 and 3. Fig. 5 is a sectional view through the mold, showing the steel bars and clamp therefor

embedded in the sand thereof, the upper ends of said bars projecting into the mold for the cast metal. Fig. 6 is a sectional view on line 6 6 of Fig. 5. Fig. 7 is a front elevation similar to Fig. 2 but showing a modified form of clamp, the same adapted for but one bar.

Referring to the drawings, A indicates the front part of a vise. B and C represent the upper and lower slide-bars thereof respectively. Said bars in this instance are made of steel so as to better stand the wear, while the front part is cast thereto of gray iron.

The feature of casting gray iron to steel is not new in constructing jaws for vises, yet it is unsuccessful in many instances owing to the difficulty to retain said steel pieces in their respective and proper positions with relation to each other and the mold aforesaid. I have accordingly devised in connection with the pattern D for said casting suitable means whereby the steel bars thereof are securely retained at any angle with relation to each other and with relation to the pattern and mold therefor. Said means consist first in forming a special clamping device for retaining the bars shown, consisting of a base portion E, having the parallel shoulders F F upon each side thereof, and a threaded bore G central therewith adapted to receive the threaded portion of a clamping-screw H. Around this clamping-screw is placed an intermediate plate I, having slightly-depending surfaces J upon each side.

The above-described shoulders and engaging-surfaces may be made of any desired shape so as to accommodate the special shape of the bars or rods to be held therein, or, in fact, the entire clamp may be varied at will without departing from the gist of my invention.

In connection with the above clamp I provide means whereby the same is securely retained in any desired position with relation to the pattern and mold made by said pattern after said pattern has been withdrawn from the sand. Said device is designed as simple as possible, and consists first in providing in the top of the clamp a suitable bore K and upon the under side of the pattern D for the jaw a depending pin L at a proper angle thereto to

engage said bore K of the clamp before mentioned, which pattern also serves to form a print for core in casting; or, if desired, I may form the bore in the pattern and the pin upon the clamp, as shown in Fig. 7 of the drawings. It is obvious from the nature of the front jaw (shown in the drawings) that the slide-bars formed therein should be formed at a perfect right angle to the jaw proper, and also that said bars should be so formed parallel to each other as to insure the free movement of said bars in and out of the female part of the vise. It will be obvious to those skilled in the art that the manner of using my clamp and casting the front part of a jaw by the assistance thereof is practically as follows: The bars B and C are placed within the clamp against the shoulders F F and secured therein by means of the thumb-screw H, after which the pattern D is attached thereto in the manner illustrated in Figs. 2 and 3. In this condition the parts are put in the bottom flask and the sand packed therein, the top of the pattern being kept even with the top of the flask, thus bringing the line of separation M of the upper and lower flask portions even with the top of said pattern D. The top portion of the flask is next placed in position and the sand packed therein, after which the top flask and its contents are removed and the pattern D withdrawn from the sand of the lower flask. The top flask is again placed in position forming the mold, practically as shown in Fig. 5 of the

drawings, which shows the same ready to receive the molten metal through the gate O. 35

In this my invention I do not wish to confine myself to the exact construction shown in the drawings for retaining the bars in position, as the same may be varied without departing from the principle thereof. 40

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

1. In a device of the class described, the combination with the pattern for molding the front part of a vise, of a pin depending therefrom, a base adjacent thereto adapted to be engaged by said pin, a clamping-screw fitted to said base, and adapted to engage metallic bars and retain the same at a right angle with relation to the pattern aforesaid. 45 50

2. In a device of the class described, the combination with a pattern, of a base having parallel shoulders thereon, a clamping-screw between said shoulders, an intermediate plate around said screw to engage metallic bars and retain the same against said shoulders, means for retaining said bars in their proper position with relation to the pattern aforesaid. 55

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 5th day of September, A. D. 1895. 60

JOHN BANNISTER.

Witnesses:

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