[21.]

JOHN W. COYNE.

Improvement in Vises.

No. 119,327.

Patented Sep. 26, 1871.

FIG.5.

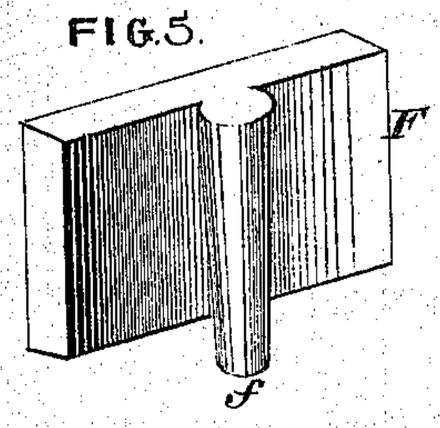


FIG.1.

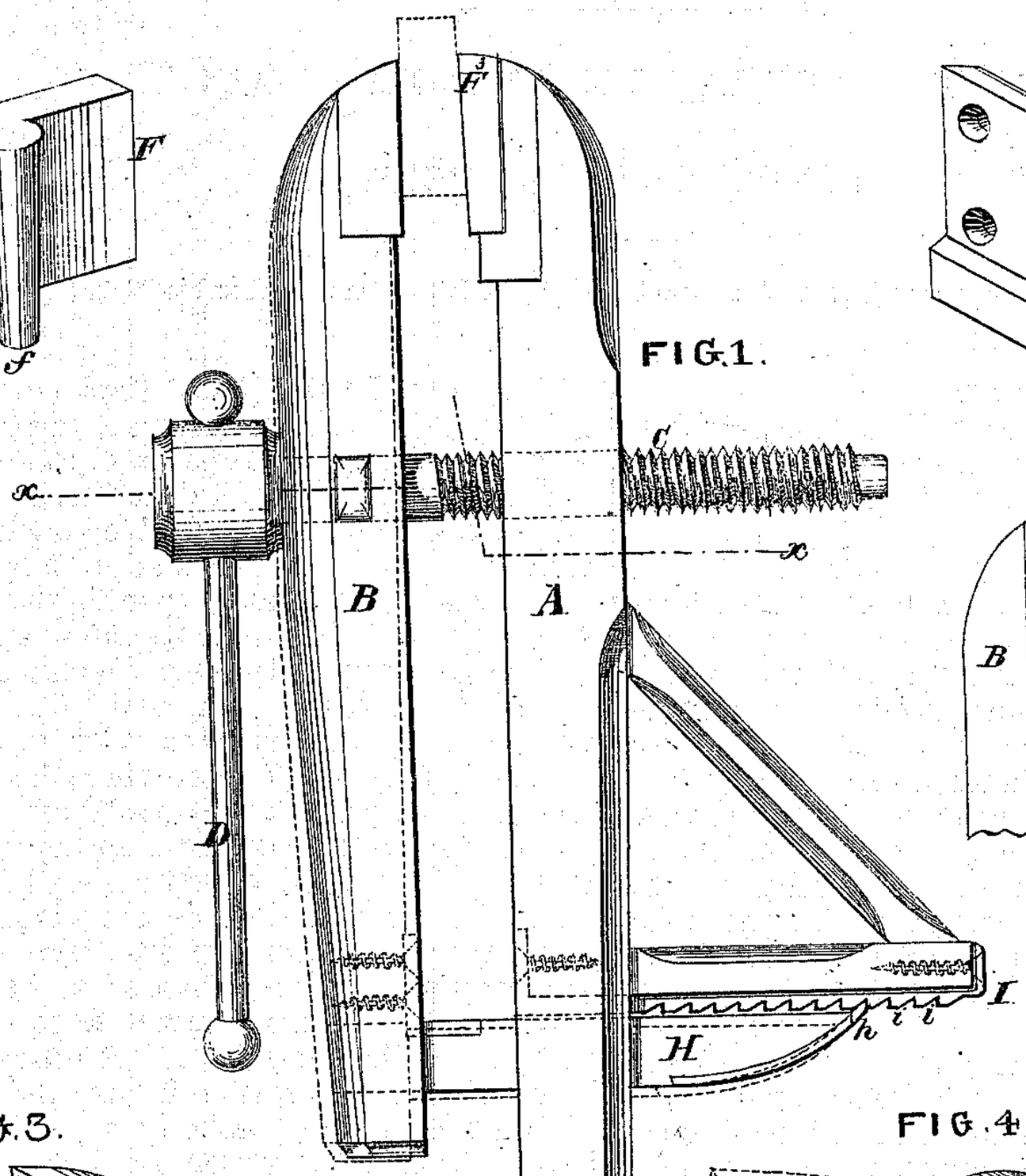


FIG.6.

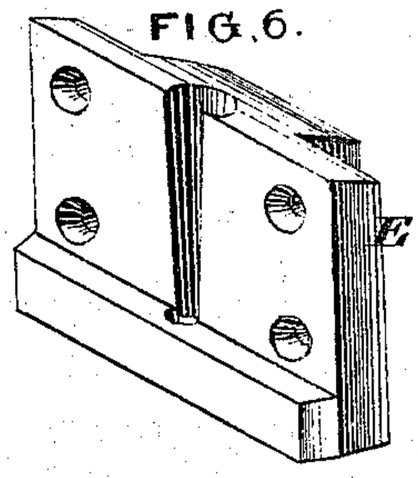


FIG.7.

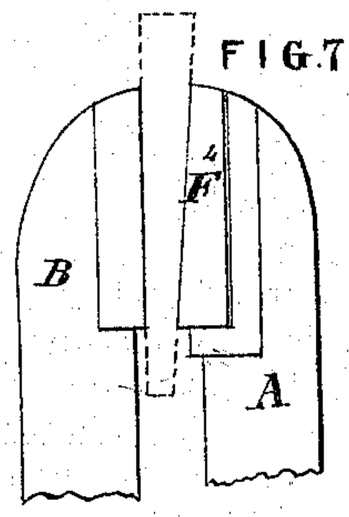


FIG.3.

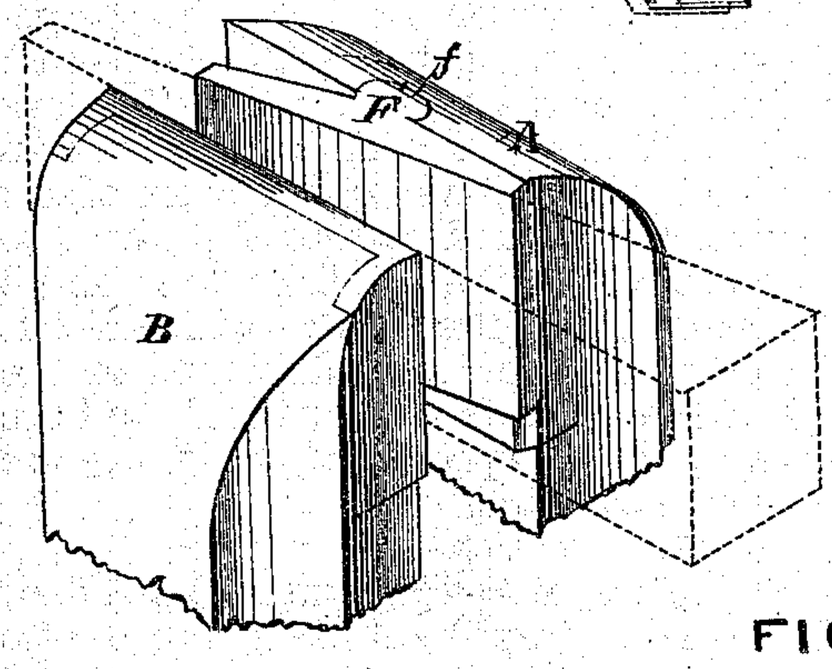


FIG.4.

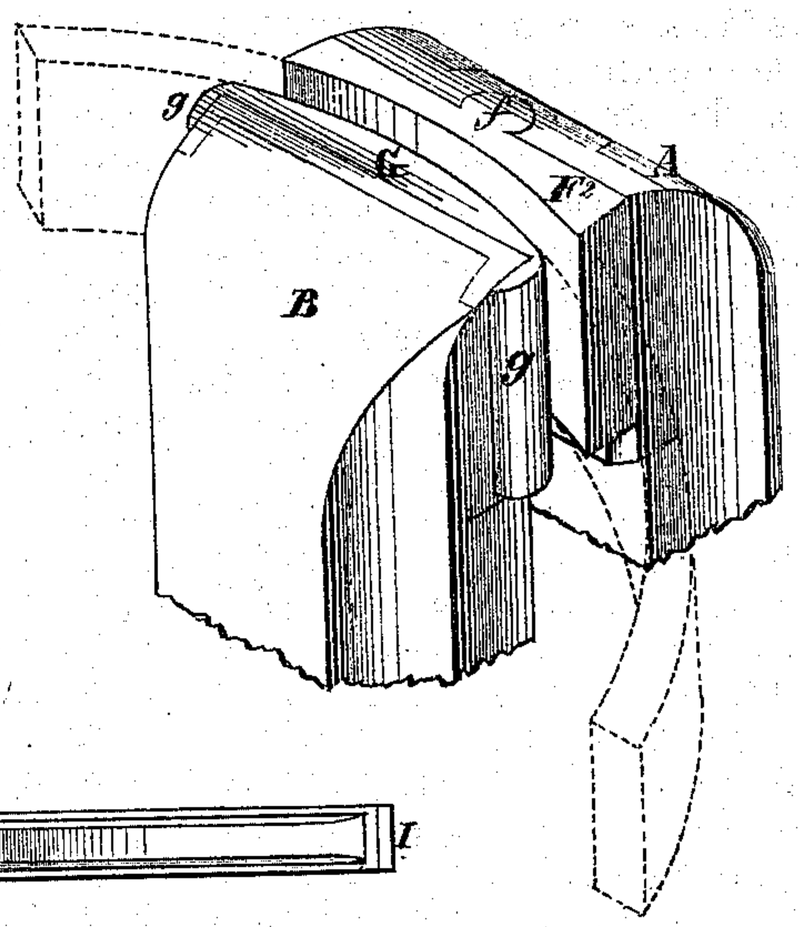
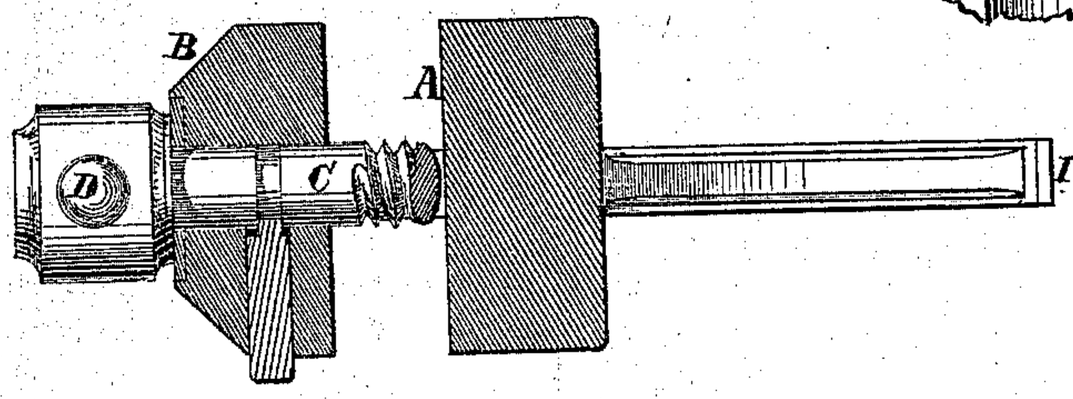


FIG.2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN W. COYNE, OF MADRID, NEW YORK.

IMPROVEMENT IN VISES.

Specification forming part of Letters Patent No. 119,327, dated September 26, 1871.

To all whom it may concern:

Be it known that I, JOHN W. COYNE, of Madrid, in the county of St. Lawrence and State of New York, have invented a new Improved Vise.

My invention consists, primarily, in an improved self-adjusting appliance at the lower part of the vise, by which the parallelism of the jaws is preserved at any distance asunder. It further consists in adapting the jaws thus provided with means for preserving parallelism to receive interchangeable face-plates for holding objects of different shapes, as hereinafter set forth.

Figure 1 is a side elevation of a vise illustrating my improvement. Fig. 2 is a section thereof at *x x*, Fig. 1. Fig. 3 is a perspective view of the upper part of the jaws, illustrating the mode of holding a wedge-shaped object. Fig. 4 is a perspective view, illustrating the mode of holding an annular body. Fig. 5 is a perspective view of one form of the removable face-plate. Fig. 6 is a perspective view of the face-plate socket. Fig. 7 is an elevation of the upper part of the jaws, showing the application of a removable face-plate tapered vertically.

A is the stationary jaw of the vise and B the movable jaw thereof, which is retracted from or pressed toward the former by means of a screw, C, operated by a lever-rod, D, in the customary manner. To the upper part of one of the jaws is applied a socket, E, shown in Fig. 6, formed and adapted to receive face-plates F F^1 F^2, any number of which may be made, in various shapes, to adapt them for any desired purpose. The face-plate F, represented in Fig. 5, is parallel front and back, to adapt it to grasp objects with parallel sides. The face-plate F^1, Fig. 3, is beveled at back, so that, as its dovetailed rib *f* fits within the socket E, it may vibrate or rock therein, and thus automatically assume any required position to firmly grasp a tapering object, such as is indicated by the dotted outline in Fig. 3, to hold the same in horizontal positions. The face-plate F^2 is formed at back to fit immovably against the jaw A, but has a concave or convex face to correspond with the concave or convex face of a removable plate, G, which is applied to the other jaw B, and may be held thereto by dovetailed flanges *g* fitting upon the edges of the said jaw, as represented. The faces of the plates F^2 and G will thus be understood to be parallel and form an arc, adapting them to tightly grasp an annular object, such as is indicated by the dotted line in Fig. 4. Employed separately, they will hold objects with one side concave or convex. F^3, Fig. 1, may represent a removable face-plate expanding in thickness upwardly, and F^4, Fig. 7, a similar face-plate tapering upwardly. These plates are thus adapted to hold objects having a vertical taper with either end up, as may be most convenient. The mode of applying and securing the removable face-plate enables me to exchange one for another with great ease and rapidity, so that the vise may be adapted to perform any kind of work. From the lower end of the movable jaw B projects an arm, H, which passes through the stationary jaw A, and is provided at its extremity with a metallic edge or point, *h*, to engage in a rack, I, that is firmly braced or otherwise rigidly attached to the stationary jaw A. The teeth of this rack are of ratchet-form, so that, as the jaw B is drawn away from the jaw A, in the position illustrated by the dotted lines, the point *h* will slip freely over the backs of the teeth *i;* but the instant the reverse action of the screw causes the upper end of the jaws to grasp an object placed between them, and restore the jaw B to the position shown by the full lines, the point *h* will be arrested by the first teeth *i* with which it comes in contact. The inward motion of the lever end of the jaw B is thus arrested, and the parallelism of the jaws preserved while they are at any distance asunder.

I claim as my invention—

The combination, with the jaws A B and their screw C, of the improved self-adjusting device for preserving parallelism, composed of the rigid arm or pawl H projecting inward from the movable jaw, and the stationary rack I for the engagement of said pawl, arranged and operating as shown and described, with or without the described adaptation of the upper ends of the jaws to receive interchangeable face-plates F F^1 F^2 F^3 F^4 G for holding objects of different shapes.

JOHN W. COYNE.

Witnesses:

GEO. G. SIMONS,

E. C. WALSH.

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