

J. HYDE.
WRENCH.

No. 12,510.

Patented Mar. 13, 1855.

Fig. 1.

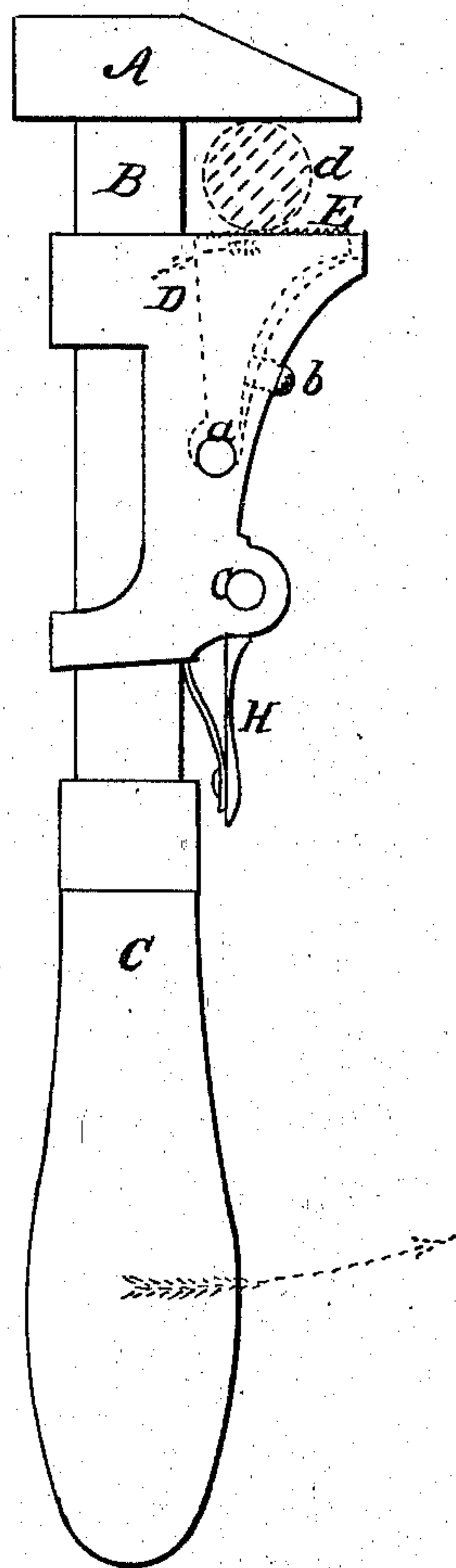


Fig. 2.

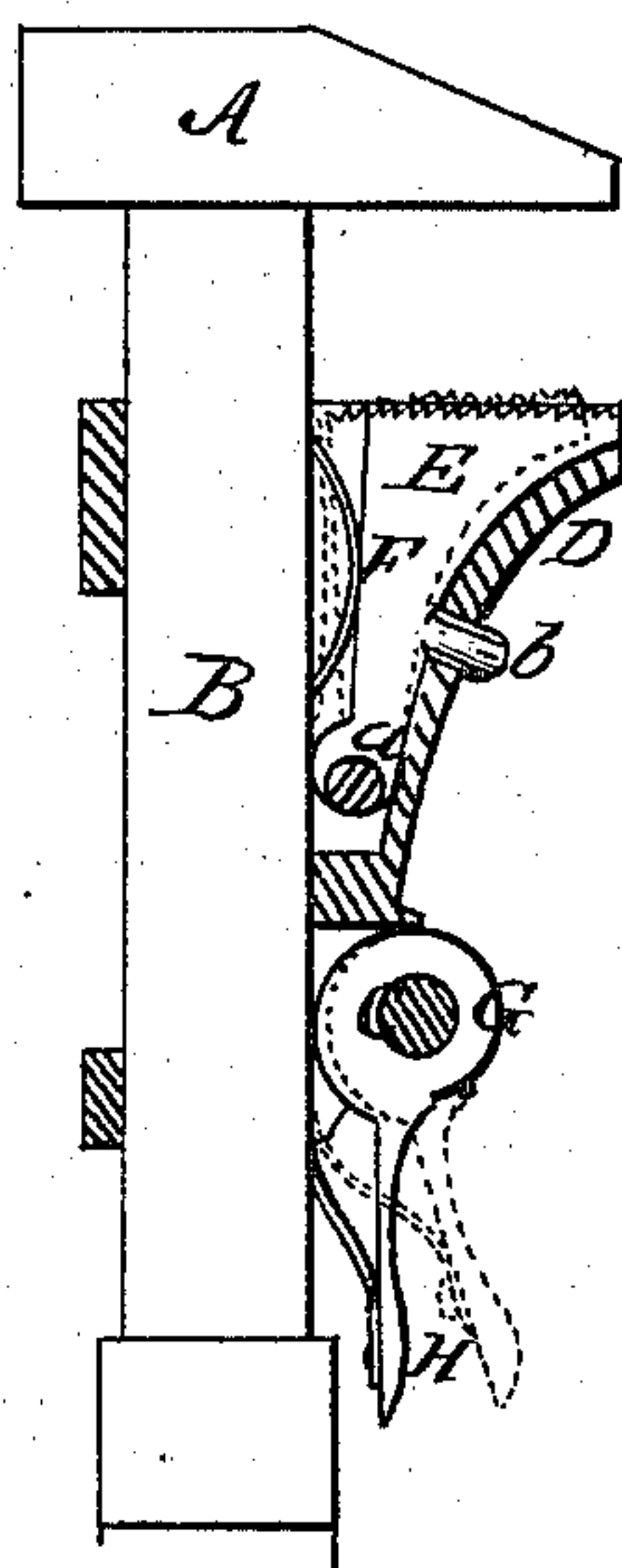
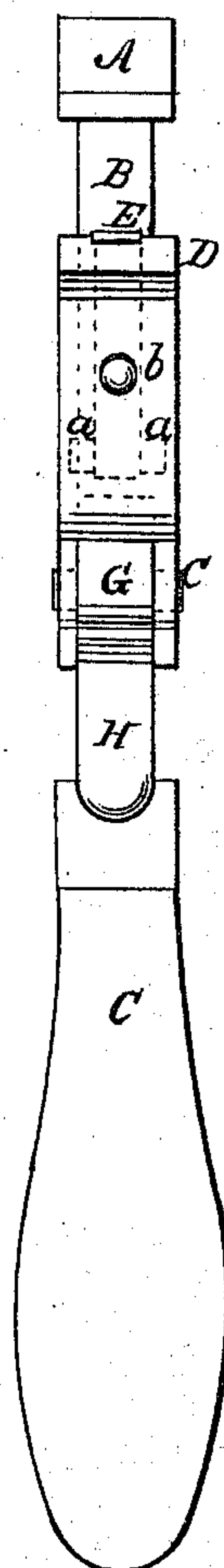


Fig. 3.



UNITED STATES PATENT OFFICE.

JOSEPH HYDE, OF NEW YORK, N. Y.

IMPROVEMENT IN SCREW-WRENCHES.

Specification forming part of Letters Patent No. **12,510**, dated March 13, 1855.

To all whom it may concern:

Be it known that I, JOSEPH HYDE, of the city, county, and State of New York, have invented a new and Improved Wrench; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side view of my improved wrench. Fig. 2 is also a side view of the same, the lower or movable jaw being in section and showing the "gripper" or auxiliary jaw and cam. Fig. 3 is a back view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

The nature of my invention consists in having an auxiliary jaw or gripper placed in either of the jaws of the wrench and so constructed and arranged, as will be hereinafter fully shown, that said auxiliary jaw or gripper will as the wrench is turned bind firmly on the article between the jaws, and consequently allow cylindrical as well as square or polygonal shaped articles to be grasped firmly by the jaws.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the upper or stationary jaw attached to a shank B of rectangular form. The lower part or end of the shank is secured in a handle C.

D is the movable jaw, which slides freely on the shank B. The jaw may be of any convenient form, and may be described as being hollow or having a recess within it extending from its upper to its lower part. Within this recess an auxiliary jaw or gripper E is secured, the lower end of the jaw or gripper having short trunnions *a a*, fitting in recesses in the jaw D. The upper surface of the jaw or gripper E is corrugated and is flush with the upper surface of the jaw, except when acted upon, so as to have its outer end thrown upward, as will be hereinafter described. Between the inner side of the auxiliary jaw or gripper E and the shank B there is placed a spring F, as shown in Fig. 2. This spring keeps the upper surface of the jaw or gripper flush with the upper surface of the jaw D. To the front or outer side of the jaw or gripper E there is attached a projection *b*, which

extends through an opening in the front edge of the jaw D.

Within the lower part of the movable jaw D there is a cam G, the axis *c* of said cam working in the sides of the jaw. The cam has a spring-lever H attached to it.

The movable jaw D, as before stated, is allowed to move freely on the shank B, and is secured at any desired point by pressing the thumb or finger on the lever H, by which the cam G is made to bind against the shank B. Now if a round piece of iron or tubing *d* (see Fig. 1) be placed between the two jaws A D and the movable jaw raised or moved upward so as nearly to touch the iron *d*, and secured at that point by pressing the lever H, and the auxiliary jaw or gripper E, by pressing upon the projection *b*, be thrown up against the iron or tube *d*, it will be seen that by turning the wrench in the usual direction, as indicated by the blue arrow, Fig. 1, the iron or tube *d* will be grasped firmly between the jaw A and the jaw or gripper E, and the greater the force exerted in turning the wrench the greater will be the holding force upon the iron or pipe, because the iron or pipe as the wrench is turned has a tendency to turn the jaw or gripper upon its trunnions *a*, as indicated by the dotted arrow, Fig. 1, and consequently the binding or holding force is increased in proportion to the force applied in turning the wrench.

The above wrench may be used for grasping square or polygonal forms as well as round. It is equally applicable for both purposes, for the auxiliary jaw or gripper when not in action does not prevent the jaws A D from acting similarly to an ordinary wrench; hence the importance of the invention. It is equivalent to two ordinary tools, for at present there are tools constructed for grasping round iron or tubing only, called "gas-tongs," but differing widely in construction from my improved wrench.

The auxiliary jaw or gripper E may be constructed of steel properly hardened, so as not to be liable to bruise or slip.

If necessary, one side of the shank B may be corrugated and corresponding corrugations made on the inner side of the lower or movable jaw D on the side opposite the cam, so that said jaw may be kept secure and pre-

vented from slipping. This may be necessary in large wrenches, but probably will not be requisite in small ones.

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

The auxiliary jaw or gripper E, applied to or inserted within either the stationary or movable jaw of a hand or screw wrench, said jaw or gripper being constructed and arranged

as herein shown or in an equivalent way, so as to bind or press the article between it and the stationary jaw with a force proportionate to that exerted in turning the wrench, as set forth.

JOSEPH HYDE.

Witnesses:

J. G. MASON,

J. W. COOMBS.