

(No Model.)

D. R. PORTER.

WRENCH.

No. 291,933.

Patented Jan. 15, 1884.

Fig. 1.

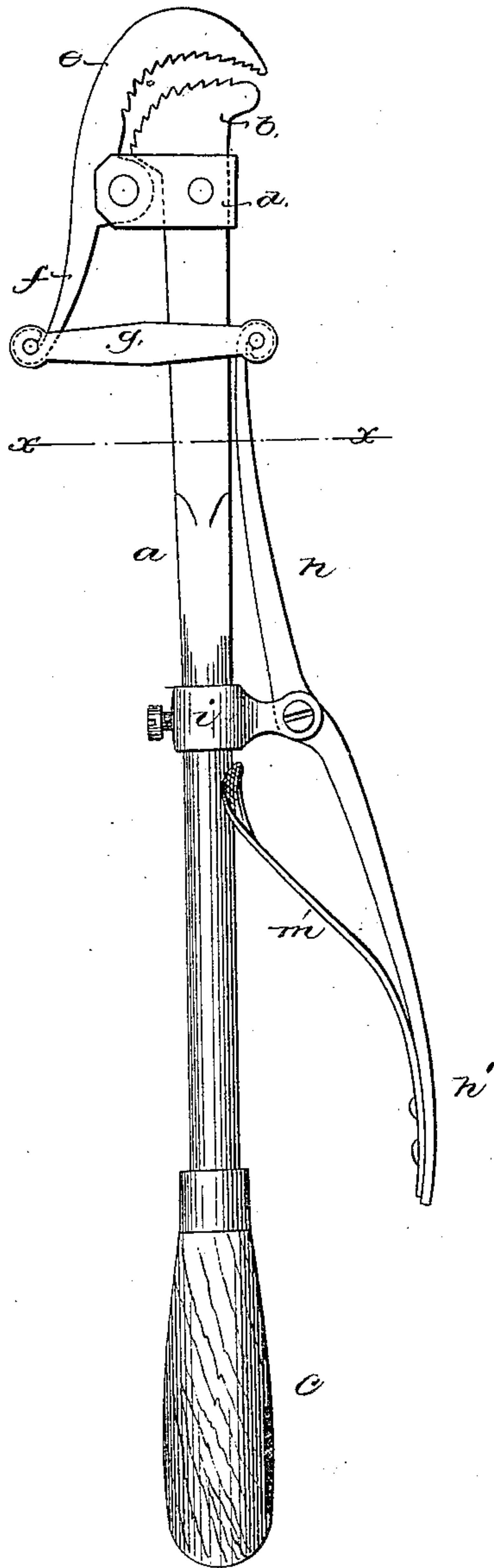
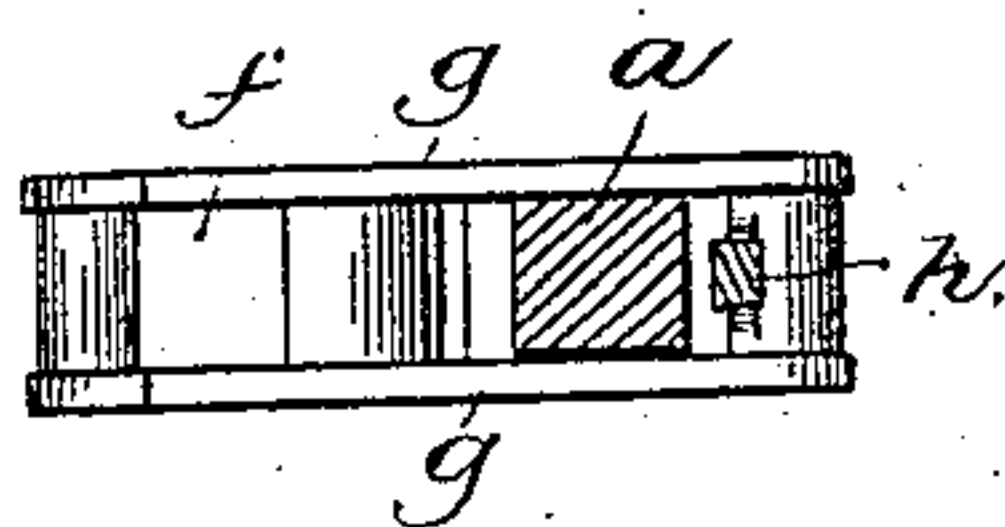


Fig. 2.



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UNITED STATES PATENT OFFICE.

DANIEL R. PORTER, OF RANDOLPH, MASSACHUSETTS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 291,933, dated January 15, 1884.

Application filed June 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, DANIEL R. PORTER, of Randolph, county of Norfolk, State of Massachusetts, have invented an Improvement in Wrenches, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention, relating to pipe-wrenches, is embodied in a wrench having a shank or handle provided with a fixed jaw having a convex face, and a co-operating concave-faced jaw, pivoted between ears of a strap attached to the said shank, and in such relation to the fixed jaw that its movement on its pivot opens and closes the said jaws, to enable different-sized bolts or pipes to be engaged thereby. The pivoted or movable jaw has an extension or tail, which is connected by a link with an operating-lever pivoted upon the shank of the wrench in proper position to be operated by the hand grasping the handle of the wrench to open the jaws, thus rendering the wrench more easily operated at places where it is difficult to obtain access to the article being turned. A spring is employed to move the pivoted jaw in the direction to close the movable jaw upon the article as soon as the operator releases the jaw-operating handle, and in turning the wrench its grip upon the article increases in proportion to the force applied.

Figure 1 is a side elevation of a wrench embodying this invention, and Fig. 2 a transverse section thereof on line *x x*.

The shank *a* is provided at one end with a fixed jaw, *b*, having a convex engaging surface or face, and at its other end with a suitable handle, *c*. Near the fixed jaw *b* the shank is provided with a strap, *d*, embracing and extending beyond it to form lugs or ears, on or between which the jaw *e* is pivoted, it having a concave engaging-surface to co-operate with

that of the jaw *b*. The jaw *e* is provided with an extension or tail, *f*, connected by links *g*, one at either side of the shank *a*, with the end of the jaw-operating lever *h*, pivoted in a bracket, *i*, upon the shank, and having a handle portion, *h'*, extended sufficiently near to the handle *c* of the wrench to enable it to be easily operated by the hand holding the wrench. Thus, by pressing the handle portion *h'* of the lever *h* toward the shank *a* of the wrench, the jaw *e* is removed from the jaw *b*, to permit an article to be inserted between them, and upon releasing the said handle *h'* the jaws are caused to close upon the article by a spring, *m*, shown as connected with the lever *h* and bearing on the shank of the wrench to move the said lever in the direction to close the jaws.

In another application, No. 112,194, filed by me November 19, 1883, I have shown the movable jaw provided with the extension as operated by a spring, and in the said application the said jaw is combined with other parts—viz, the toothed shank, strap, or block, having a pivot for the jaw, and a spring.

I claim—

In a wrench, the shank and its fixed jaw *b*, having a convex face, combined with the movable jaw, pivoted on a strap connected with the shank and in the described relation to the fixed jaw, and provided with an extension, *f*, and the jaw-operating lever, pivoted with relation to the shank and connected by the link with the extension of the pivoted jaw, to operate substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DANIEL R. PORTER.

Witnesses:

JOS. P. LIVERMORE,
W. H. SIGSTON.