(No Model.)

W. N. SMITH & H. M. VINCENT.

WRENCH.

No. 286,561. Patented Oct. 9, 1883.

Fig. 1.

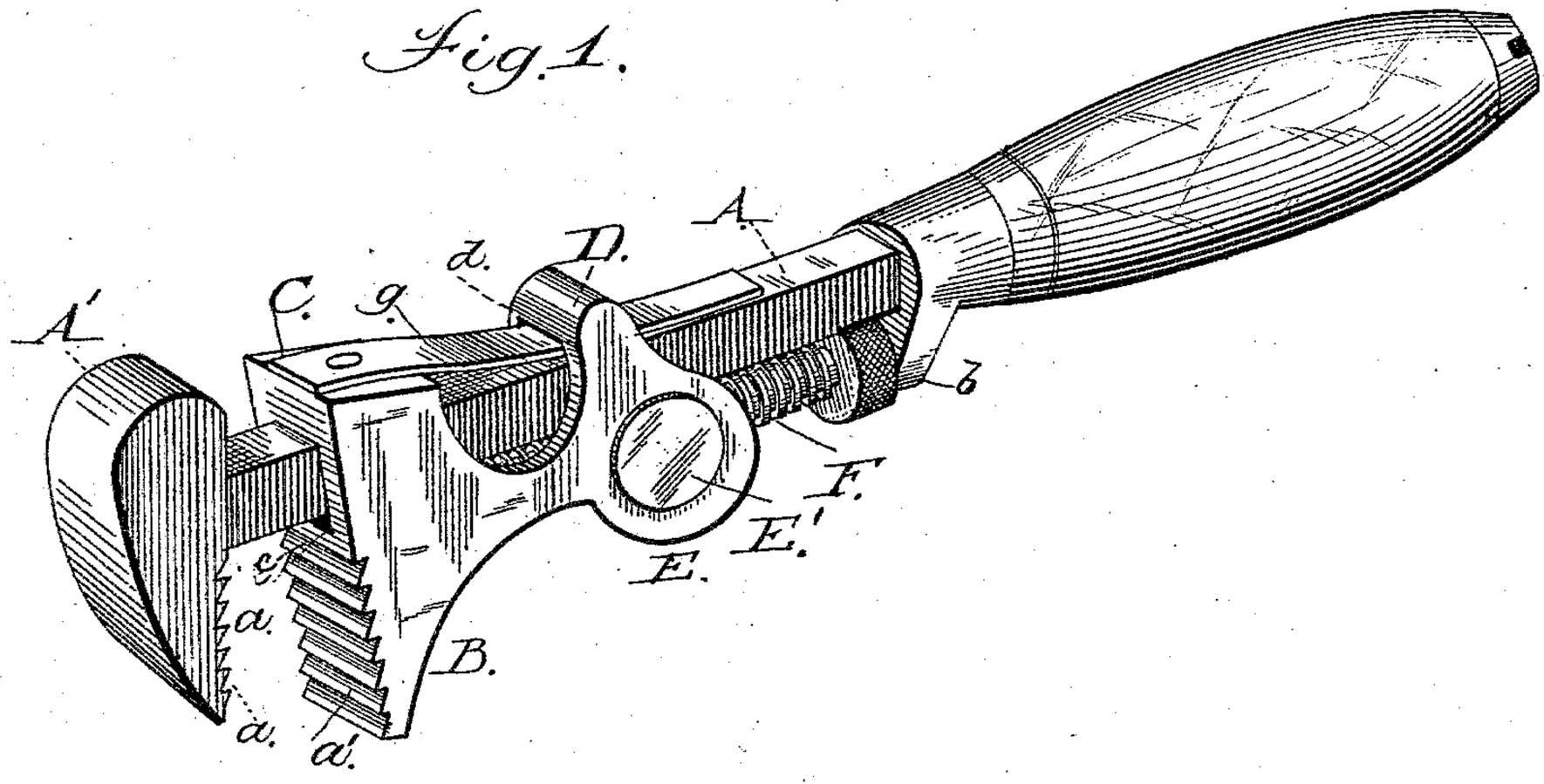


Fig. 2.

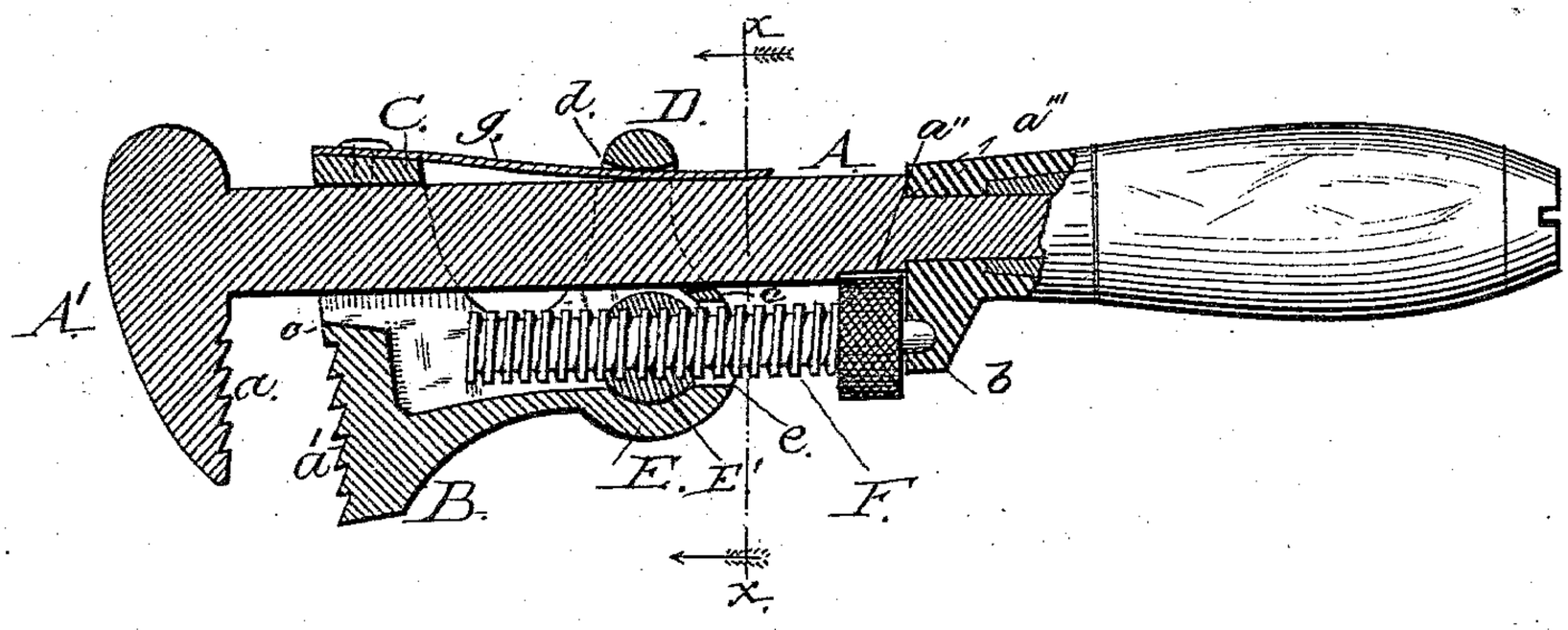
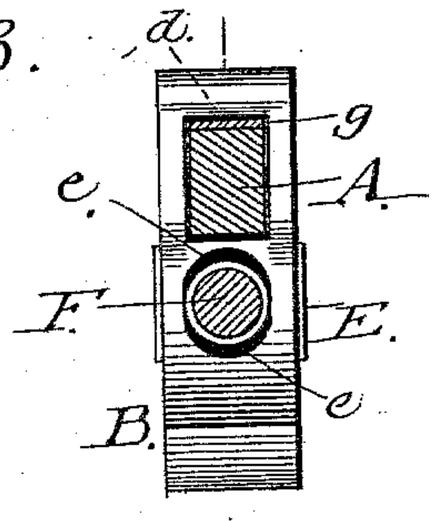


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLARD N. SMITH AND HERBERT M. VINCENT, OF NEW BEDFORD, MASS., ASSIGNORS OF ONE-THIRD TO EZEKIEL H. NOBLE, OF SAME PLACE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 286,561, dated October 9, 1883.

Application filed July 7, 1883. (No model.)

To all whom it may concern:

Be it known that we, WILLARD N. SMITH and HERBERT M. VINCENT, citizens of the United States of America, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Wrenches; and we 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in wrenches, its object being to construct a wrench which may be utilized either as a means for holding nuts which are rectangular, six-sided, or octagonal in shape, or for grasping cylindrical objects, which is accomplished by one set of jaws; and to this end our invention consists in providing a wrench with a stationary jaw and a plain rectangular shank, to which the handle is attached, and a sliding jaw which is pivoted to an adjusting means located to one side of the shank, as will be hereinafter more fully set forth, and pointed out in the claims.

In the accompanying drawings, which illustrate our invention, Figure 1 is a perspective view. Fig. 2 is a longitudinal section, and Fig. 3 is a transverse section taken through the line *x x* of Fig. 2.

A represents the shank of the wrench, which is preferably rectangular in cross-section, and is provided at its lower portion with a suitable handle. Formed on the upper part of this shank A is a stationary jaw, A′, which, if desirable, may be serrated on its inner side, as shown at *a*. This shank A is also provided with suitable steps, *a″ a‴*, as shown in Fig. 2, the lower step, *a″*, being for the reception of the thumb-nut, which rests upon the outwardly-projecting portion *b*, attached to the upper end of the handle, and surrounding the shank A. The handle hereinbefore described is attached to the shank in the usual manner.

The sliding jaw B consists of a single casting, which is provided with straps C and D, which embrace the shank A, and the jaw of this casting is serrated, as shown at *a′*, these serrations being in an opposite direction from the serrations *a* upon the stationary jaw A′. The portion of this casting adjacent to the shank immediately in the rear of the forward end of the jaw is hollow, with the exception of the end portions, as indicated by the letters *c c*, which form bearing-surfaces which rest upon the edge of the shank, and to the rear of the jaw is formed an enlarged portion, E, which is provided with a transverse circular perforation for the reception of a nut, as will be hereinafter more fully set forth.

The upper portion of the strap D, where it passes over the edge of the shank A, is curved in cross-section, as shown at *d*, and the portion of this strap on the opposite side of the shank, and on the line with the same, is provided with an oblong perforation, *e*, through which passes the adjusting-screw F.

In the perforations in the enlarged portion E of the sliding jaw B is placed a screw-threaded nut, E′, the exterior portion of this nut being cylindrical in shape. The nut is held in place within the opening by the side walls and adjusting-screw. By this means, while the adjusting-screw is held rigid, the jaw is allowed a pivoted movement upon the nut.

To the upper part of the strap C, which passes over the shank, is secured a suitable spring, *g*, which is secured to the transverse portion of the strap C by a rivet. This spring passes under the transverse bar *d* of the strap D, and its free end bears at this portion upon the upper edge of the shank A, as shown, the end of this strap being opposite to the nut E′. The transverse bar *c*, adjacent to the nut E′, extends slightly above said nut, while the outer transverse bar, *c*, adjacent to the sliding jaw of the wrench, is below the upper portion of the nut.

By the means hereinbefore described, and the oblong opening *e*, the sliding jaw is allowed a pivoted movement upon the adjusting-screw F, the nut E′ being the center.

The operation of our invention may be described as follows: When it is desired to use the wrench upon nuts, the jaw B, when adjusted and when pressure is applied to the same, will assume a position so that the face of the same will be parallel to the jaw A′, and

when a cylindrical object is placed between the jaws and the same are turned thereon said object will be grasped and held secure between said jaws, the same being tightened or driven farther into the wedge-shaped space between the jaws as the wrench is turned.

It will be readily seen that by our invention we provide a wrench which may be readily used either as a pipe-wrench or a nut-wrench, and we obviate the objectionable feature of screw-threading the shank of the wrench.

We are aware that prior to our invention what are termed "duplex wrenches" have been constructed; but in these cases the shanks have been screw-threaded, which materially weakens the same.

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

1. In a wrench adapted to be used either as a pipe-wrench or nut-wrench, the hollow sliding jaw B, embracing the shank, and pivoted to the adjusting means located to one side of the shank, and adapted to play within the jaw, substantially as shown.

2. The wrench hereinbefore described, consisting of a plain shank A, stationary serrated jaw A′, and adjustable sliding jaw embracing the shank, and recessed for the reception of the adjusting means, and provided with a spring for the purpose of throwing the upper portion of the pivoted jaw against the shank, substantially as shown, and for the purpose set forth.

3. In combination with a wrench having a shank, stationary jaw, handle, and adjusting-screw of ordinary construction, the sliding jaw B, provided with straps which embrace the shank, and a recess for the reception of the adjusting-screw, and a cylindrical nut secured within the sliding jaw, said jaw being provided with an oblong opening for the passage of said adjusting-screw, substantially as shown and described.

4. In a wrench, the fixed jaw A′, secured to the shank A, in combination with the hollow jaw B, provided with straps C D, the rear strap having its transverse bar curved on its under surface, and spring *g*, attached to the transverse bar of the front strap, and pivotal nut E′, located within the sliding jaw, adjusting-screw F, which passes into the jaw B through an oblong opening, *e*, the parts being organized substantially as shown, and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLARD N. SMITH.
HERBERT M. VINCENT.

Witnesses:
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FRANK A. MILLIKEN.