No. 701,952. Patented June 10, 1902.

C. C. SMITH.

NUT WRENCH.

(Application filed Mar. 13, 1902.)

(No Model.)

Fig. 1.

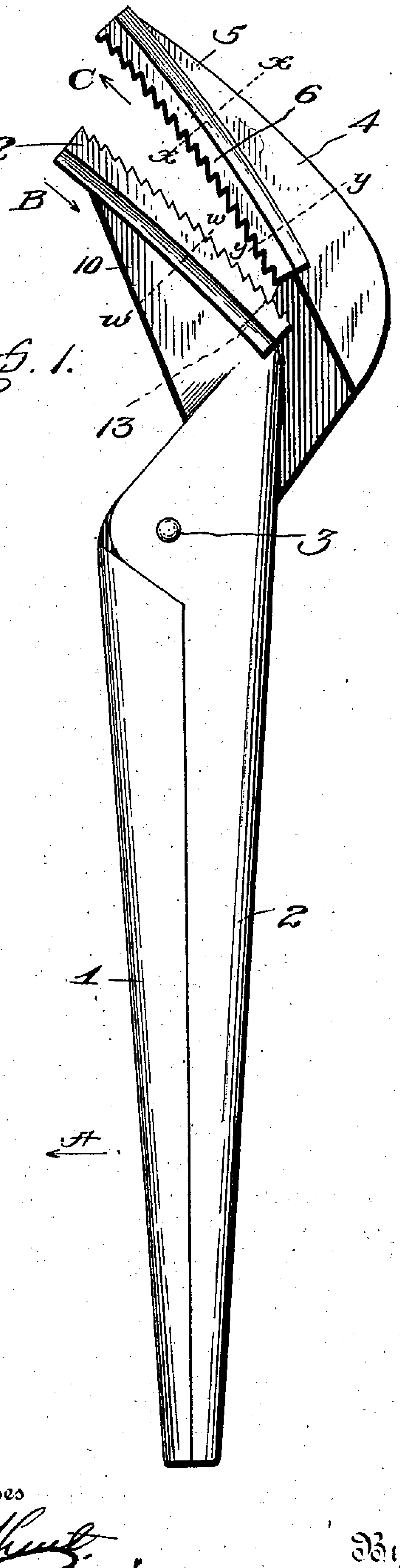


Fig. 2.

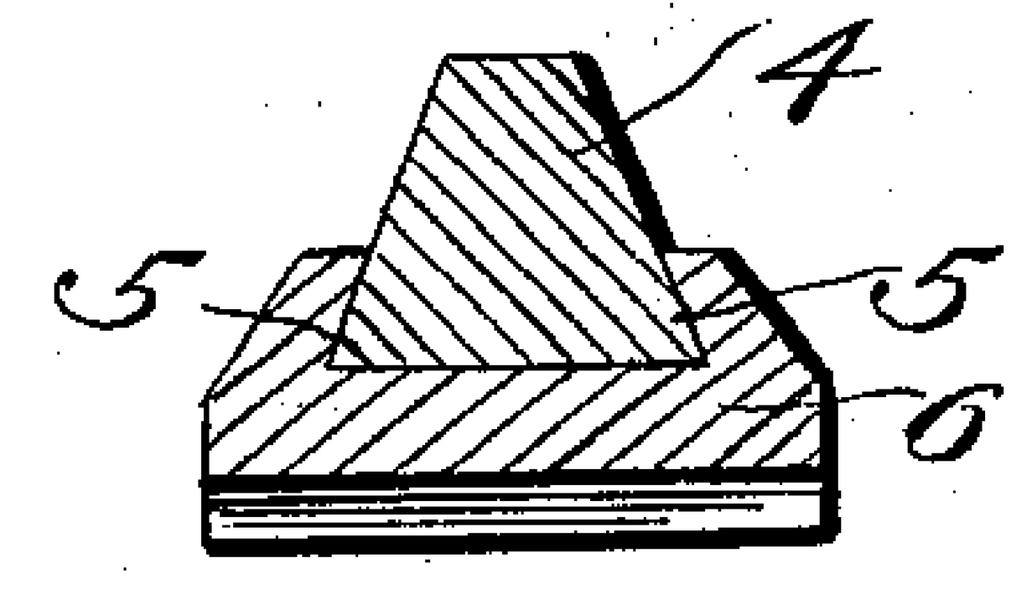


Fig. 3.

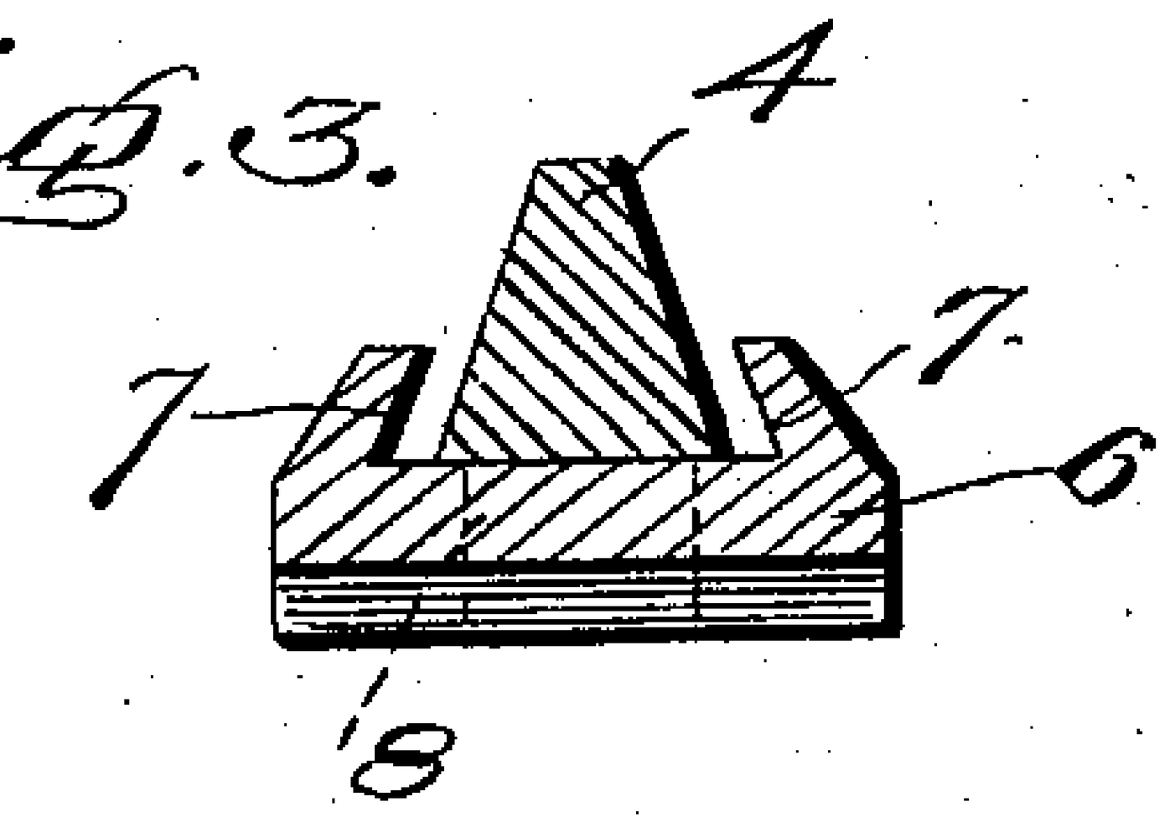


Fig. 4.

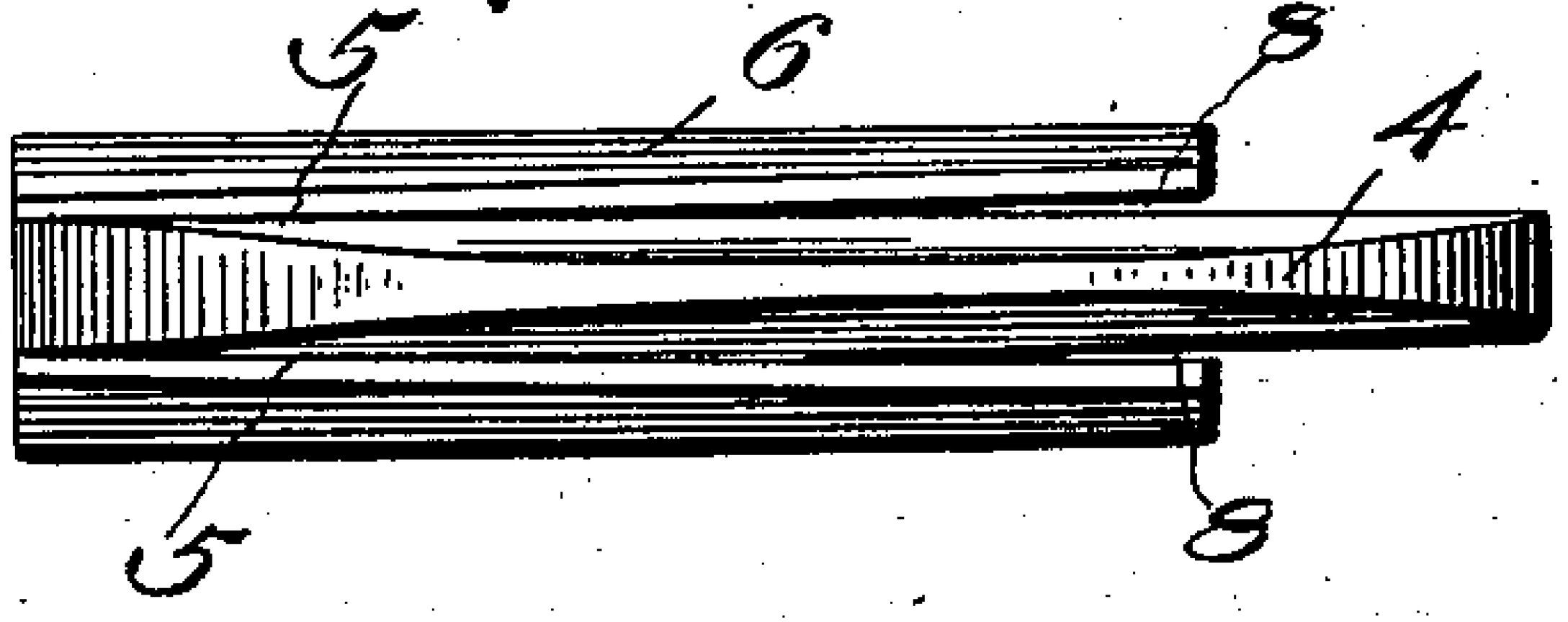
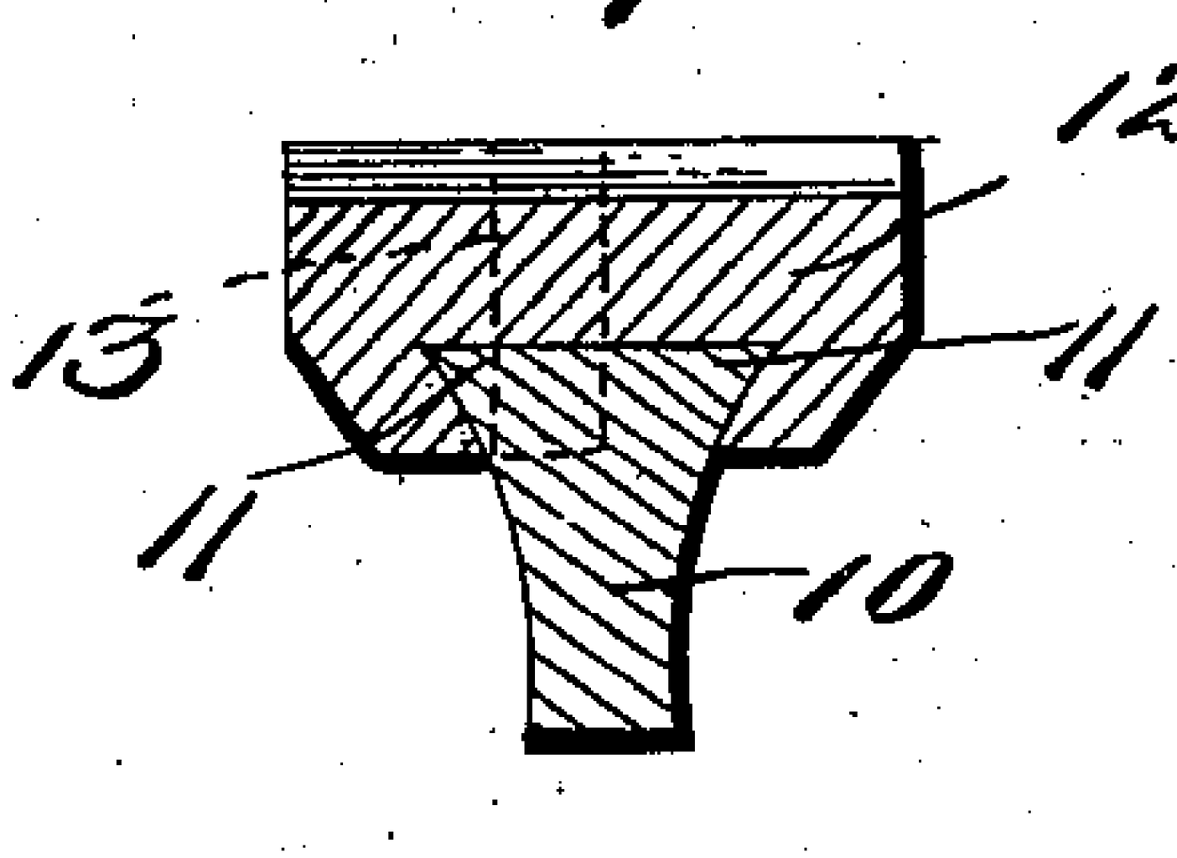


Fig. 5.



Witnesses

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By

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UNITED STATES PATENT OFFICE.

CHARLES C. SMITH, OF BELLEVUE, IDAHO.

NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 701,952, dated June 10, 1902.

Application filed March 13, 1902. Serial No. 98,055. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. SMITH, a citizen of the United States, residing at Bellevue, in the county of Blaine and State of Idaho, have invented certain new and useful Improvements in Nut-Wrenches; and I do 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.

The invention relates to nut-wrenches of the tong type, designed for use in places which are inaccessible for wrenches of the sliding-jaw type and constructed with a view of gripping and securely retaining nuts of all shapes, such as square, hexagonal, octagonal, or, in fact, any polygonal nut.

The object of the invention is to provide a wrench of this character which shall be simple of construction, durable in use, comparatively inexpensive of production, and efficient in action and one in which the gripping-shoes may be removed when worn and replaced with new ones.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, which will be hereinafter more particularly described, and pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a view of the wrench, showing the jaws closed. Fig. 2 is a cross-sectional view on line $x\,x$ through the upper jaw and removable gripping-shoe. Fig. 3 is a similar view on line $y\,y$. Fig. 4 is a top plan view of the upper jaw, and Fig. 5 is a cross-sectional view on line $w\,w$ of Fig. 1 through the lower jaw and its gripping-shoe.

In the accompanying drawings, 1 and 2 denote the handles of the levers, the outer ends of which are recessed or notched and pivoted together by a pivot 3. The outer end of the handle 1 projects upwardly at an incline and then outwardly and downwardly and forms a jaw 4, the side of which for a portion of its length beginning at the extreme outer end of the jaw is beveled to form dovetail ribs 5, which as they approach the inner or rear end of the jaw gradually merge into the surface of the jaw.

6 denotes a gripping-shoe which has on its upper surface a dovetail slot 7, which is narrower at its outer end than at its inner end and has at its inner end a dovetail-groove 8, which in the assembling or connection of the shoe with the jaw is adapted to straddle the shank of the jaw, so that the groove may engage the lower edge of the jaw, and by sliding the shoe outwardly it will be made to firmly bind in its connection with the jaw as the narrower part of the groove is moved toward the wider part of the jaw.

10 denotes the lower jaw, formed at the outer end of the handle 2 and provided with dovetail flanges 11, which fit the dovetail groove of the removable shoe 12, which is provided with a notch or slot 13 in its inner end to receive the shank of the jaw 4 when the jaws are compressed.

In operation, assuming the jaws to be clamped about a nut, in the depression of the handles in the direction of the arrow A (indicated in Fig. 1) the lower shoe will be forced inwardly in the direction of the arrow B, and the upper shoe will then be forced outwardly in the direction of the arrow C. In the forcing of the lower shoe inwardly the end wall of the groove will abut against the extreme outer end of the lower jaw, and thus prevent further movement of said shoe, and the upper shoe will be forced outwardly, thus firmly binding it to the jaw, for the farther the upper shoe is forced outwardly the tighter the engagement it will have with its jaw.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of the invention will be readily understood without requiring an extended explanation.

Various changes in the form, proportion, and details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

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

In a nut-wrench of the character described, the combination with pivoted handles formed with jaws at their outer ends dovetail in cross-section, of removable shoes having dovetail grooves to receive the dovetail jaws and provided with serrated gripping-faces and formed with slots in their rear ends, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES C. SMITH.

Witnesses:
JOSEPH W. FULD,
LEON FULD.