

(No Model.)

H. M. SMITH.  
WRENCH.

No. 603,290.

Patented May 3, 1898.

Fig. 1.

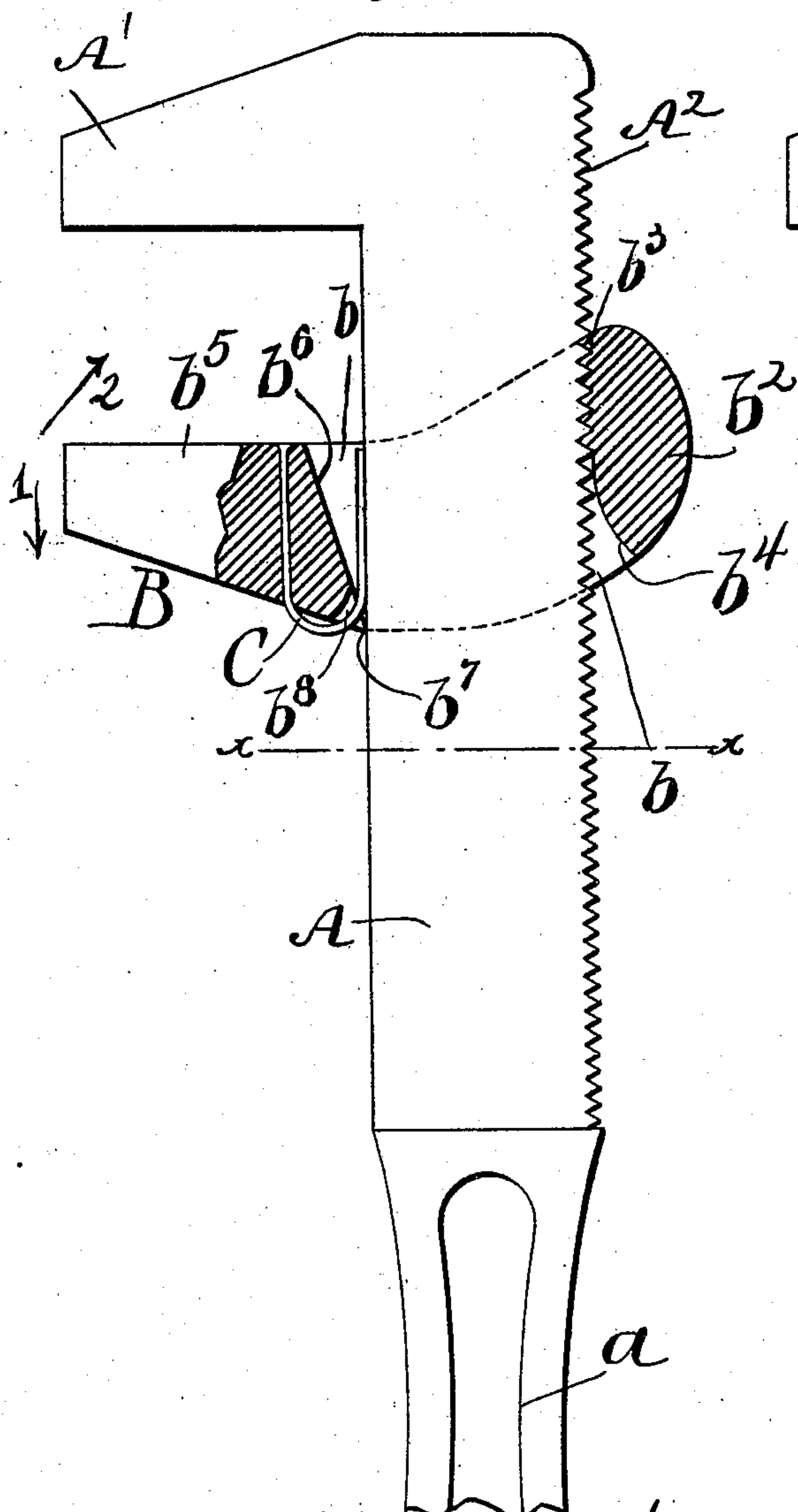
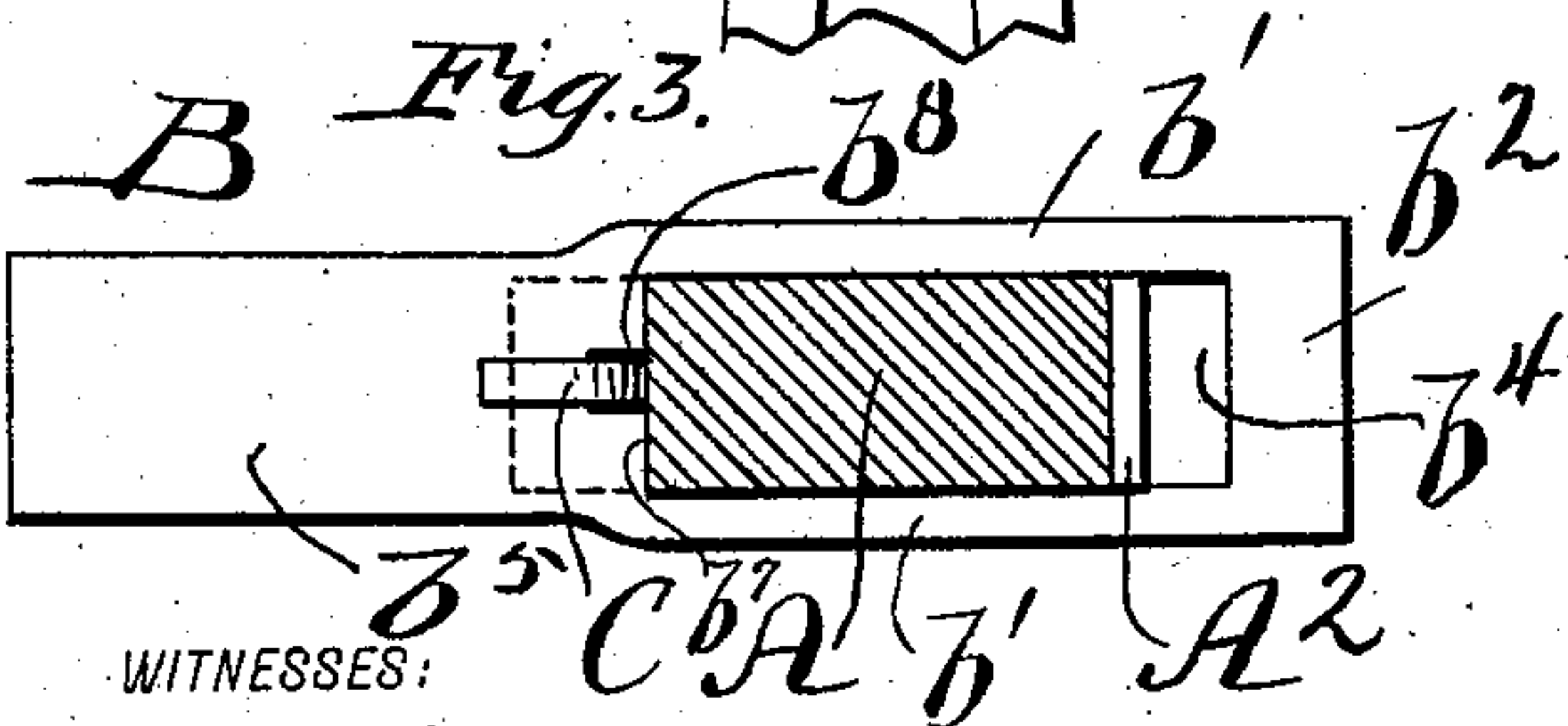
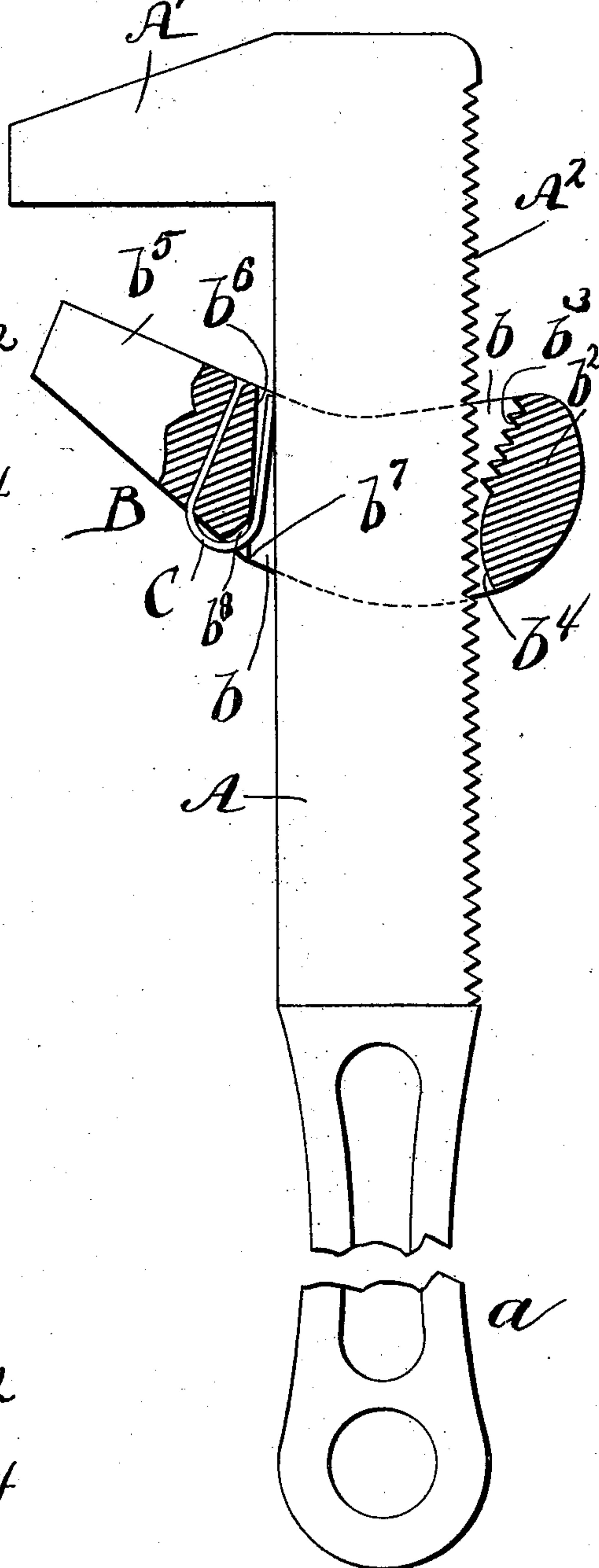


Fig. 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HUBERT MONTGOMERY SMITH, OF NEW YORK, N. Y.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 603,290, dated May 3, 1898.

Application filed June 9, 1897. Serial No. 639,974. (No model.)

*To all whom it may concern:*

Be it known that I, HUBERT MONTGOMERY SMITH, a citizen of the United States, and a resident of New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to improvements in wrenches for turning bolts, nuts, &c.; and the object thereof is to provide an effective and compact device of this character adapted for easy operation and adjustment, while at the same time it is so constructed that accidental displacement of the movable jaw forming part thereof is prevented, the construction of said jaw being such that pressure exerted by the operation of turning a nut or bolt only tends to hold and secure the said jaw in its arbitrarily-set position.

The device is simple in construction, inexpensive, and durable, and it can be effectively constructed in small sizes for the purpose of taking up but little space in a tool-case.

The invention will be hereinafter fully described, and specifically set forth in the annexed claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side view of my improved wrench, showing a portion of the movable jaw forming part thereof broken away in cross-section. Fig. 2 is a similar view showing the jaw placed in position for adjustment, and Fig. 3 is a cross-sectional view taken on the line  $x x$  of Fig. 1.

In the practice of my invention I provide a rod A, having a jaw A' projecting at right angles from its outer end. This said rod is preferably rectangular in cross-section, and the back edge thereof is provided with a rack A<sup>2</sup>, the opposite end of the rod being provided with a suitable handle  $a$ , adapted for use in operating the wrench.

Engaging with the rod A is a sliding jaw B. This said jaw is provided with an aperture  $b$ , and the side walls  $b'$  thereof engage snugly with the sides of the bar A. The end wall  $b^2$  of the sliding jaw B is provided upon its inner surface with a series of teeth  $b^3$ , which normally register with the teeth comprised in

the rack A<sup>2</sup>. Extended from this said series of teeth is a convex surface B<sup>4</sup>, adapted to bear and rock upon the rack A<sup>2</sup> without making connection therewith, whereby the jaw is permitted to slide upon the bar A when it is placed in the position illustrated in Fig. 2 of the drawings. The inner end B<sup>5</sup>, comprising the jaw proper, has a beveled face B<sup>6</sup>, and the point B<sup>7</sup> thereof is in normal contact with the rod A, whereby any pressure exerted upon the jaw B in the direction of the arrow 1 will only tend to tighten the jaw and maintain it in the position at which it may be set.

As a means for normally maintaining the jaw B in a locked position, whereby its end  $b^5$  extends at right angles from the rod A, a suitable spring C is provided. This said spring is preferably of a U-shaped contour, and it is riveted or otherwise secured to the jaw B, the free end thereof extending through a small opening  $b^8$  in the jaw B and bearing against the edge of the rod A.

In the operation and use of the device it is obvious that movement of the end  $b^5$  of the jaw B in the direction of the arrow 2 will release the teeth  $b^3$  from the rack A<sup>2</sup> and cause the convex surface B<sup>4</sup> to rest or rock upon the rack A<sup>2</sup>, whereby the movable jaw can slide upon the rod A and be set at any arbitrarily-selected position. When the jaw is released, the spring C will immediately lock it in place.

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

1. A wrench, comprising a rod having a rack on the rear edge thereof, a fixed jaw extended at right angles to the rod, and a sliding apertured jaw mounted on said rod, said jaw having a toothed surface formed at the rear upper end thereof for engagement with the said rack, and a convex surface extended downwardly from the said toothed surface, whereby the teeth may be swung out of engagement with the rack, and a spring for maintaining the sliding jaw normally at right angles with the said rod, substantially as shown and described.

2. In a wrench, the combination of a rod having a fixed jaw extended at right angles therefrom, a rack formed upon the rear edge thereof, and a sliding jaw engaging with the

said rod, said jaw having a toothed surface for normally engaging with the said rack and a convex surface extended from said toothed surface, and a spring in the shank adapted  
5 to engage the rod for maintaining the sliding jaw in operative position, substantially as shown and described.

3. In a wrench, the combination of a sliding jaw and a rod having a fixed jaw extended at  
10 right angles therefrom, said rod having a rack formed on the rear edge thereof, said jaw having a convex end portion provided with teeth on the upper part thereof and the lower part smooth, adapted for use as a bearing for  
15 the jaw when disengaged from the rack, the

free end of the jaw having a beveled inner surface and a U-shaped spring connected to the said free end and bearing normally upon the said rod, whereby the jaw is normally maintained at right angles with the rod, sub- 20  
stantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 7th day of June, 1897.

HUBERT MONTGOMERY SMITH.

Witnesses:

C. SEDGWICK,  
B. McCOMB.