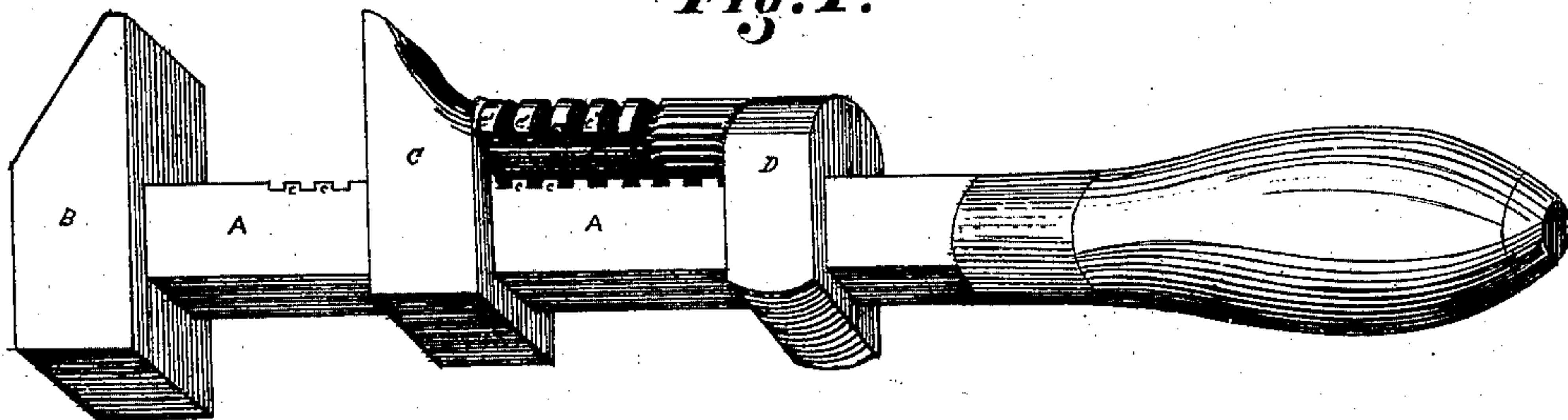
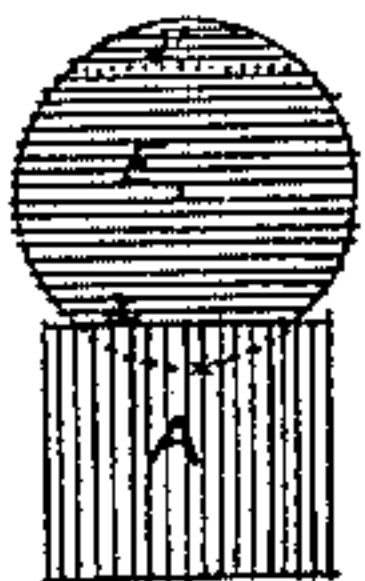


Isaac H Smith:  
 No. 66,051. June 25, 1867.  
**Fig. 1.**



2.



3.



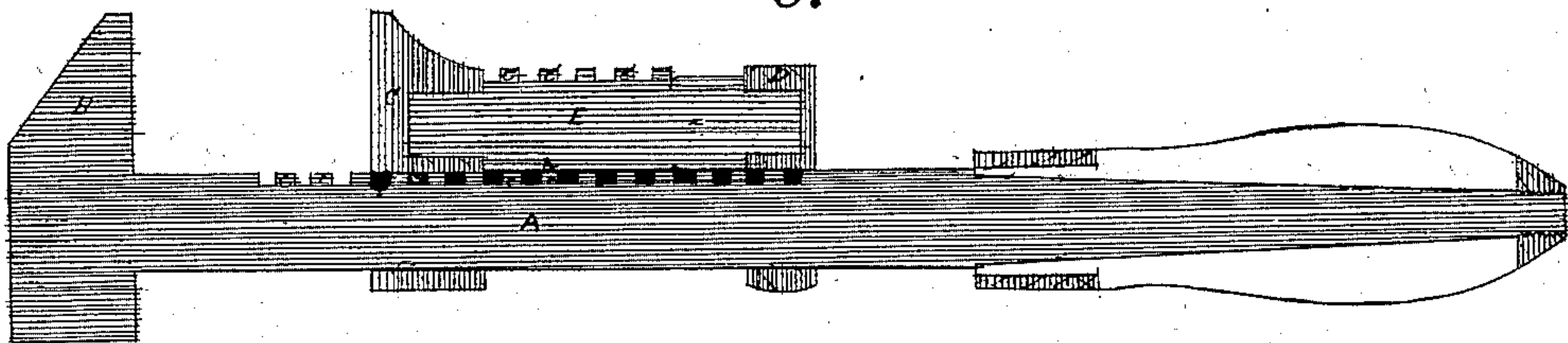
4.



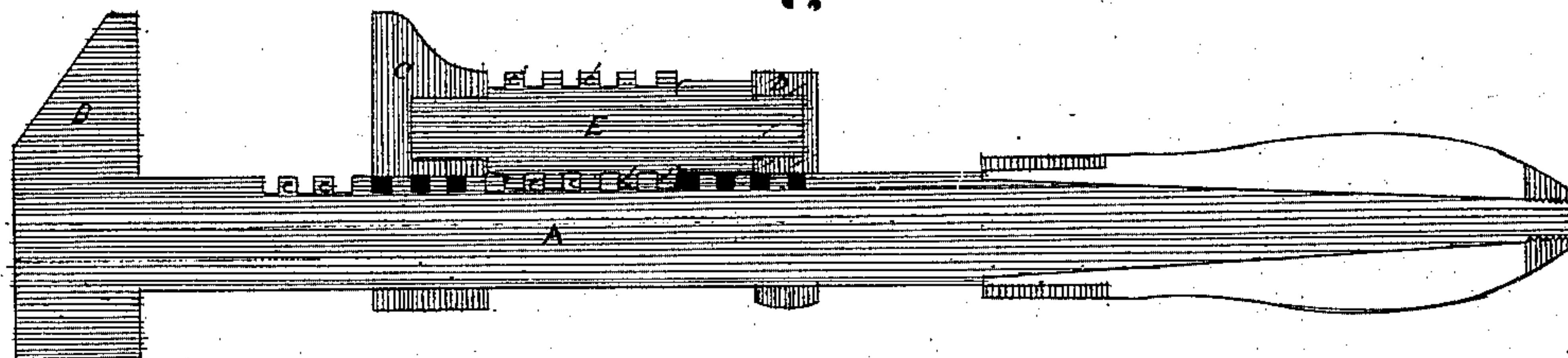
5.



6.



7.



Isaac H Smith

Witnesses.

Alexander Selkirk  
 George H Smith

# United States Patent Office.

ISAAC H. SMITH, OF ALBANY, NEW YORK.

Letters Patent No. 66,051, dated June 25, 1867.

## IMPROVEMENT IN WRENCHES.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, ISAAC H. SMITH, of the city and county of Albany, State of New York, have invented an improvement in Screw-Wrenches, whereby they may be more readily adjusted to the different sizes of nuts to be screwed up; and I do hereby declare that the following is a full and exact description thereof.

My screw-wrench is constructed, as wrenches generally are, with a bar, a fixed jaw, and a movable jaw, together with its adjusting-screw. The adjusting-screw is a heavy screw attached at its ends to and working in the movable jaw and the screw-clip, while its thread works in a corresponding thread made on the jaw side of the bar. One or more sides of the adjusting-screw are made flat or concave, as may be desirable. When the flattened or concave side is turned down over the bar, the movable jaw can be readily moved towards the fixed jaw for a smaller nut, or it can be shoved back towards the handle for a large one, and when the jaws are thus set at a proper distance the adjusting-screw is turned, the flattened or concave side moving out from the bar, and the thread of the screw working in the thread of the bar holds the movable jaw to its place.

The advantages of this invention are, first, the wrench can be more readily adapted to the size of the nut to be worked than the double screw, and cannot shift as easily of itself by its working; second, for a quick shifting wrench it is stronger, as the double screw is weaker than the large single screw, and tends to stiffen the bar, which it should hug when in work; third, while it can be readily adapted to any size nut, it has the advantage of the large single adjusting-screw in the tendency to loosen from the nut when working the wrench, especially when somewhat worn.

To enable others skilled in the art to make and use my invention, I will describe it, reference being had to the accompanying drawings, and to the letters of reference marked thereon, the same letters referring to like parts.

Figure 1 is a perspective view.

Figure 2 is an end cross-section of adjusting-screw with flattened side when set for adjustment.

Figure 3 is an end cross-section of same for work.

Figure 4 is an end cross-section of adjusting-screw with concave side set for adjustment.

Figure 5 is a cross-section of the same set for work.

Figure 6 is a longitudinal cross-section set for adjustment.

Figure 7 is a longitudinal cross-section set for work.

A, figs. 1, 2, 3, 4, 5, 6, 7, is the ordinary wrench-bar, with its fixed jaw B, figs. 1, 6, and 7. C is the movable jaw working on the bar A, figs. 1, 6, and 7, by means of the adjusting-screw E, figs. 1, 2, 3, 4, 5, 6, and 7, the threads  $c' c'$  working in the corresponding threads  $c c$  made in the jaw side of the bar A. One end of the adjusting-screw fits in and is attached to the movable jaw C, while its other end works in and is attached to the screw-clip or band D, as in many ordinary wrenches. One or more sides of the adjusting-screw are made flat, as  $a$  and the dotted line  $a'$ , figs. 2 and 3, or concave, as  $a''$ , and the dotted line  $a'''$ , figs. 4 and 5, and when the sides either  $a a' a'' a'''$  are turned down over the bar A, as in figs. 2, 4, and 6, the movable jaw C can be moved to any point in either direction, and by turning the adjusting-screw so as to bring the flattened or concave sides  $a a' a'' a'''$  out from over the bar A, as in figs. 3, 5, and 7, the movable jaw is set, yet can be tightened or slacked as desired by slightly turning the adjusting-screw in its proper direction. When the adjusting-screw is made with concave side or sides  $a'' a'''$  the bar A is made with a convex surface on the jaw side and cut with a proper thread.

What I claim as my invention, and desire to secure by Letters Patent, is—

The adjusting-screw E, with flattened or concave side or sides  $a a' a'' a'''$ , or their equivalents, for the purpose set forth, substantially as described.

ISAAC H. SMITH.

Witnesses:

ALEXANDER SELKIRK,  
GEORGE W. SMITH.