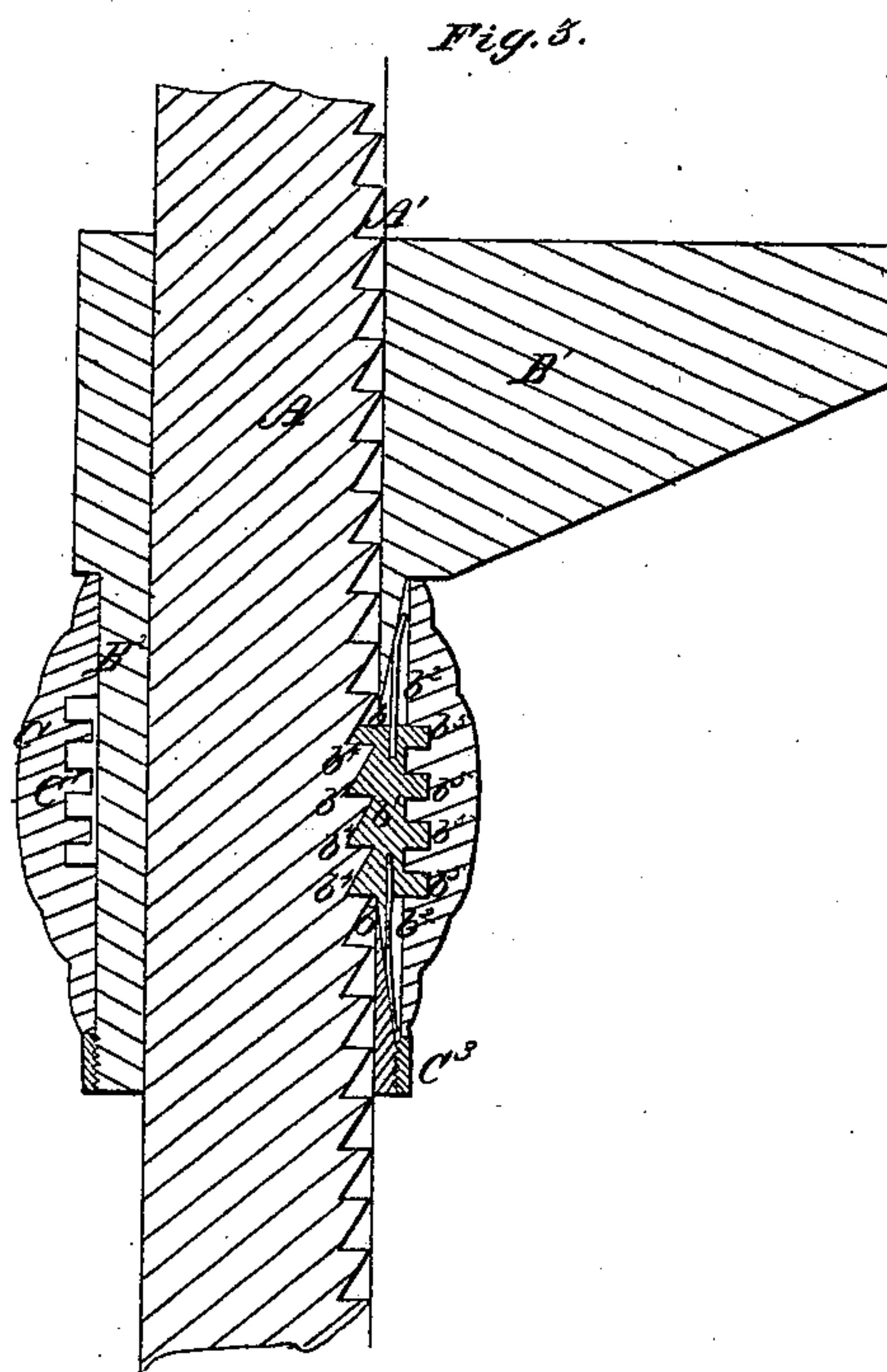
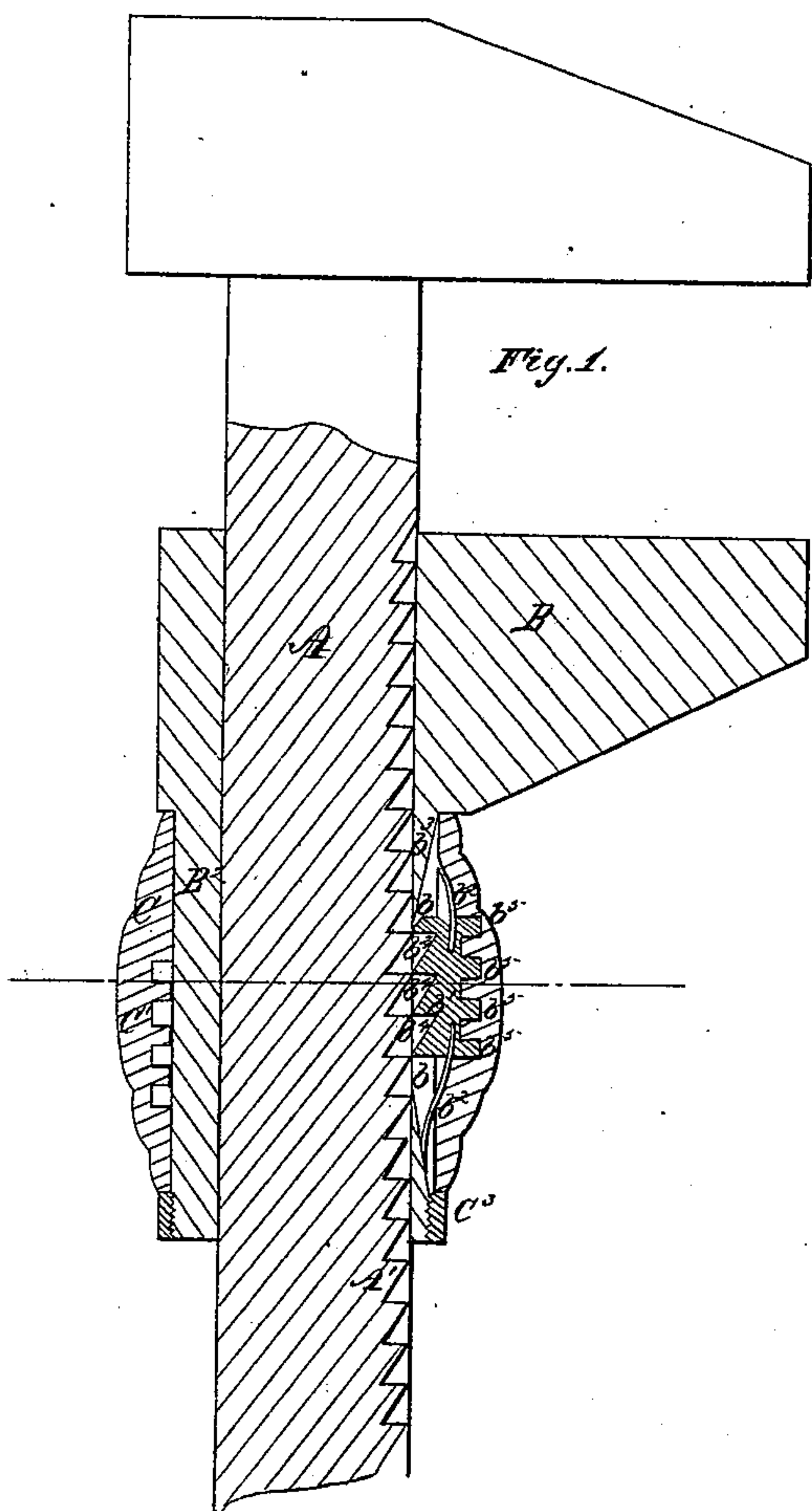
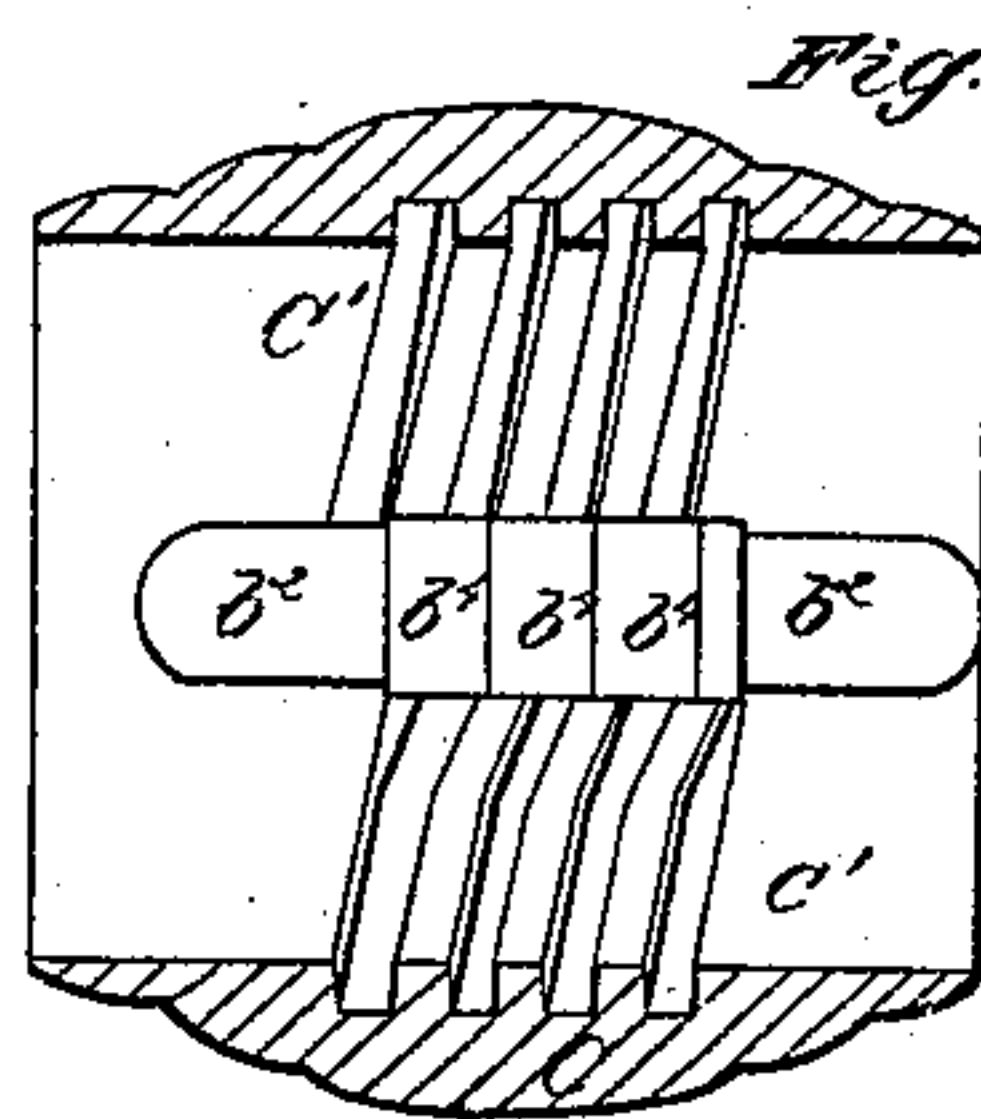
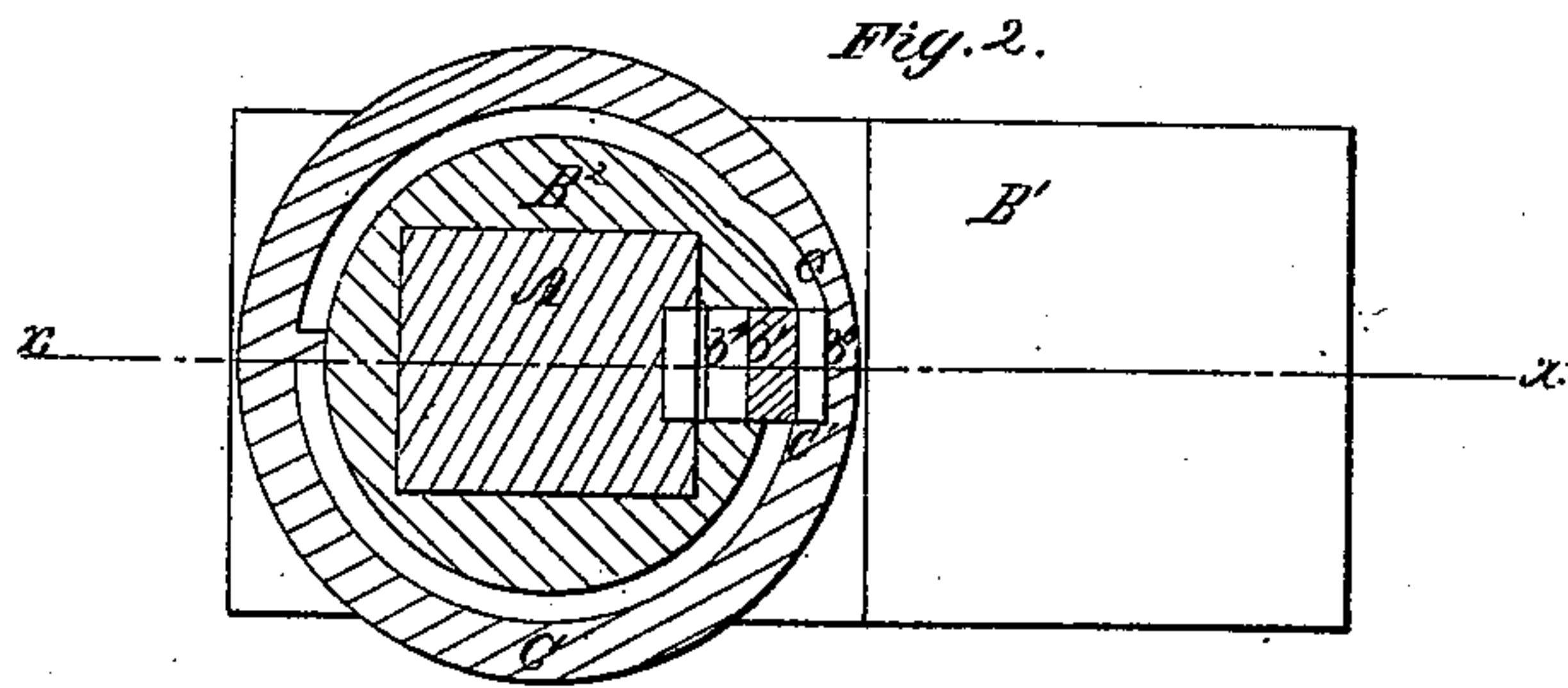


J. S. Arthur,
Wrench,

N^o 42,062,

Patented Mar. 29, 1864.



Witnesses.
Octavio Knight
Chas Du Bois

Inventor.
J. S. Arthur

UNITED STATES PATENT OFFICE.

JAMES S. ARTHUR, OF CORDAVILLE, MASSACHUSETTS.

IMPROVED NUT FOR WRENCHES AND OTHER TOOLS.

Specification forming part of Letters Patent No. 42,062, dated March 29, 1864.

To all whom it may concern:

Be it known that I, JAMES S. ARTHUR, of Cordaville, in the county of Worcester and State of Massachusetts, have invented a new and Improved Sliding Nut for Wrenches and other Tools; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a longitudinal section of a wrench, illustrating the application of my invention, the line $x x$, Fig. 2, indicating the plane of section. Fig. 2 is a transverse section of the same in the line $y y$, Fig. 1. Fig. 3 is a longitudinal section representing the plate-rack thrown into connection with the rack formed on the wrench-shank. Fig. 4 is a longitudinal central section of the sliding nut, hereinafter described.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in a novel device by which wrenches, plow planes, gages, and other adjustable tools may be operated with much greater expedition and facility, as will be hereinafter fully explained.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe it as employed in connection with a wrench.

In the accompanying drawings, A may represent a wrench-shank provided with ratchet-teeth A' .

B represents the stationary jaw, and B' the sliding adjustable jaw.

B^2 represents a sleeve, which may be formed in one piece with the jaw B' , and adapted to be moved back and forth upon the shaft A simultaneously with said jaw B' , or firmly retained in any desired position upon the shank A, in the manner to be explained. In the side of the sleeve B^2 is formed an opening or slot, $b b$, in which works a metallic block or plate, b' . On each end the plate b' is provided with a spring, b^2 , which may be supported at $b^3 b^3$. On the side of the plate b' which is adjacent the teeth A' of the shank A are formed ratchet-teeth b^4 , and on the opposite side the plate is so formed as to constitute a segment of a square threaded screw, as shown at b^5 .

C represents a circular sliding nut, on the interior of which is formed a worm or thread, $C' C'$, and a recess or cavity, c . This nut C fits over the sleeve B^2 , and in the worm $C' C'$ work the threads b^5 . By turning the nut C the cavity c may be moved in contraposition to the plate b' , when the springs $b^2 b^2$ will at once throw the plate into said cavity, and thereby withdraw the teeth b^4 from the teeth A' of the shank A. When the parts are in this position, it is manifest that there will be nothing to intercept the free movement of the sleeve B^2 and jaw B' in either direction upon the shank A. The situation of the parts when the plate b' is pressed into the cavity c is readily made known to the user of the tool by the further rotation of the nut in the same direction in which it is turned to bring the respective parts in this relation, being arrested, which is caused by the end of the plate b' coming in contact with a shoulder, c' , at one end of the cavity c . These positions of the several parts are shown in Figs. 1 and 2.

It having been indicated, as above described, that the plate b' occupies the cavity c , and the jaw B' having been slid to the desired position upon the shaft A, the rack plate b' may be thrown into connection with the rack A, so as to retain the sleeve B^2 of the jaw B' in an immovable position by turning the nut C in the opposite direction from that in which it has been turned to bring the cavity c in contraposition to the plate b' , which turning of the nut causes the threaded portion $C' C'$ of the nut to act upon the plate b' and press the same in the direction of the shank A. It is evident that the worm $C' C'$ while being turned upon the teeth b^5 must of necessity impart a slight longitudinal movement to the plate b' and its springs $b^2 b^2$, to conform to which these devices are adapted to admit of the requisite play, as shown in the drawings. As a consequence of this provision for the play of the rack-plate and springs, it is evident that even after the rack-plate has been thrown into connection with the rack A' the nut would be capable of receiving a very limited longitudinal reciprocatory movement upon the sleeve B^2 . In order to obviate this, on the end of the sleeve B^2 is adapted to turn a threaded collar or ring, C^3 , which, when the rack-plate b' is thrown into connection with the rack A' , may

be moved into contact with the nut C by a slight turn, so as to prevent any movement of the jaw whatever, and consequently of the parts which move simultaneously therewith.

When the invention is to be employed in connection with a plow-plane, the teeth b^4 of the plate b' , as well as the teeth A' , may of course be made straight.

I wish it distinctly understood that I do not limit myself to the particular construction of devices herein laid down, as it is manifest that the same may be modified to suit the various purposes for which they may be used without departing from the essential principles of my invention.

Having thus described my invention, the

following is what I claim as new therein and desire to secure by Letters Patent:

1. The nut C and toothed block b' , operating in combination with the shank A, to adapt the jaw B' to be either freely slid on the said shank or adjusted by the screw.

2. The sliding toothed block b' , constructed and operating substantially as and for the purposes explained.

The above specification of my improved sliding nut for wrenches and other tools signed by me this 11th day of February, 1864.

JAS. S. ARTHUR.

Witnesses:

CHARLES DU BOIS,
JAMES H. GRIDLEY.