

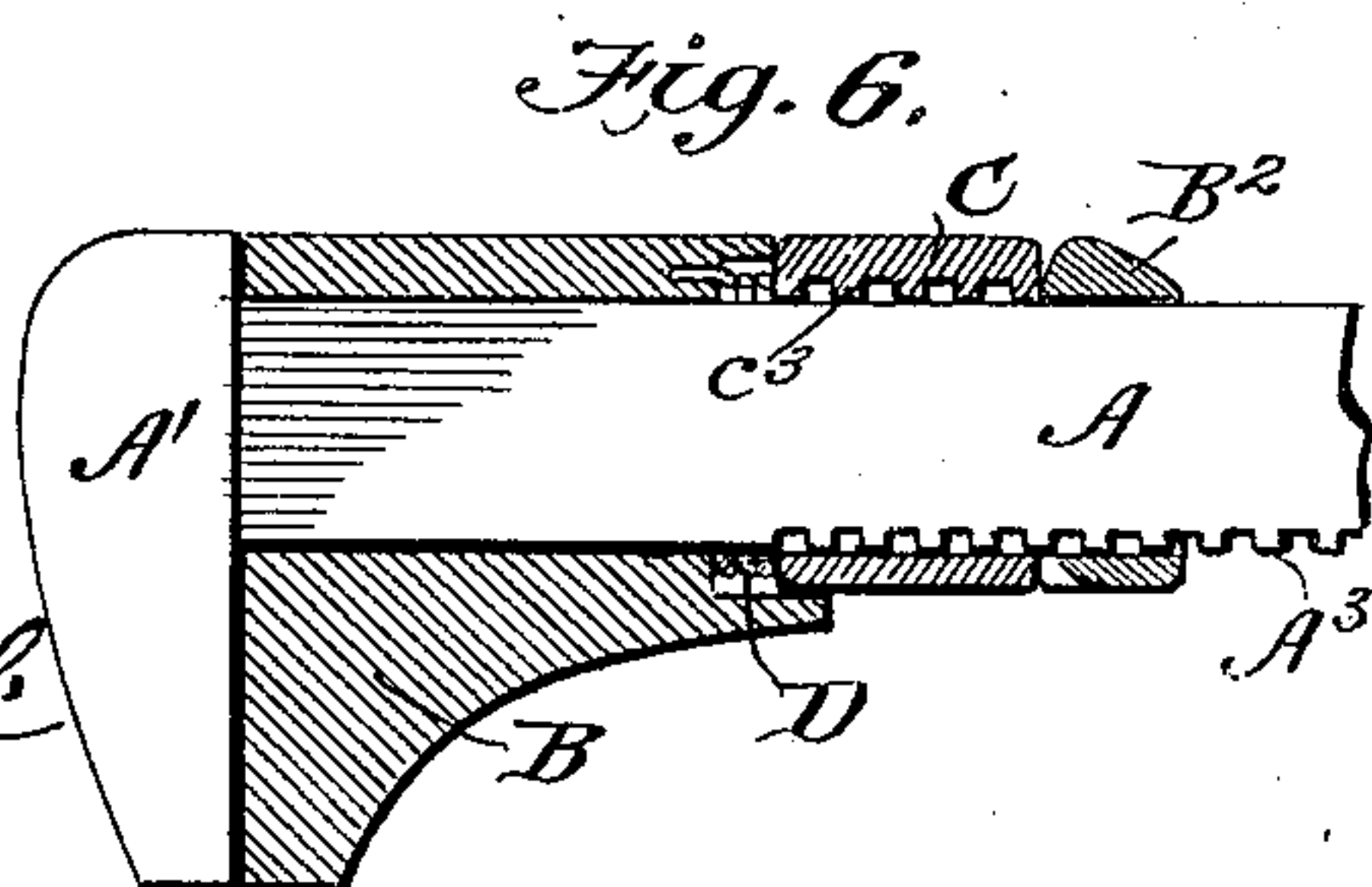
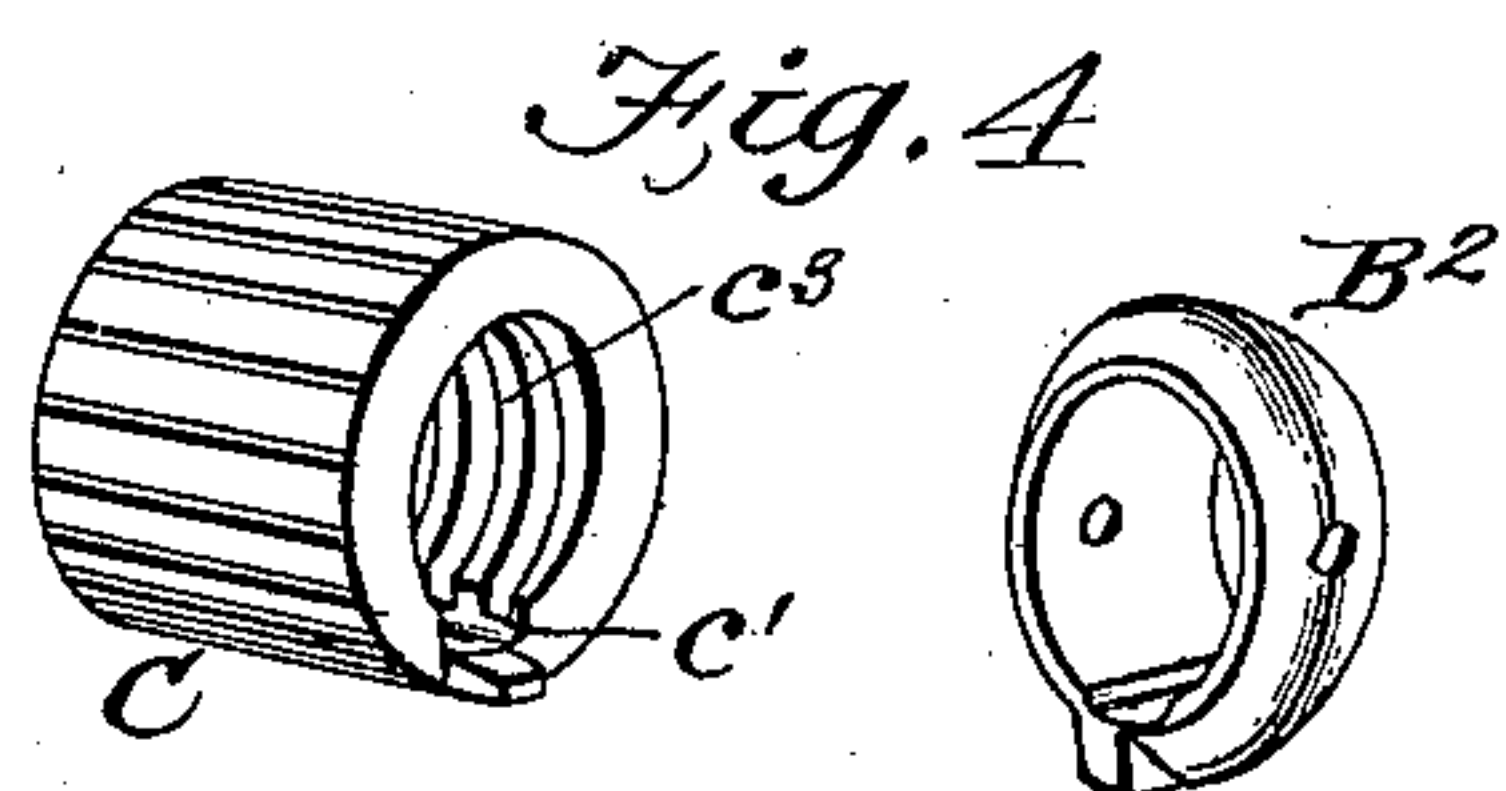
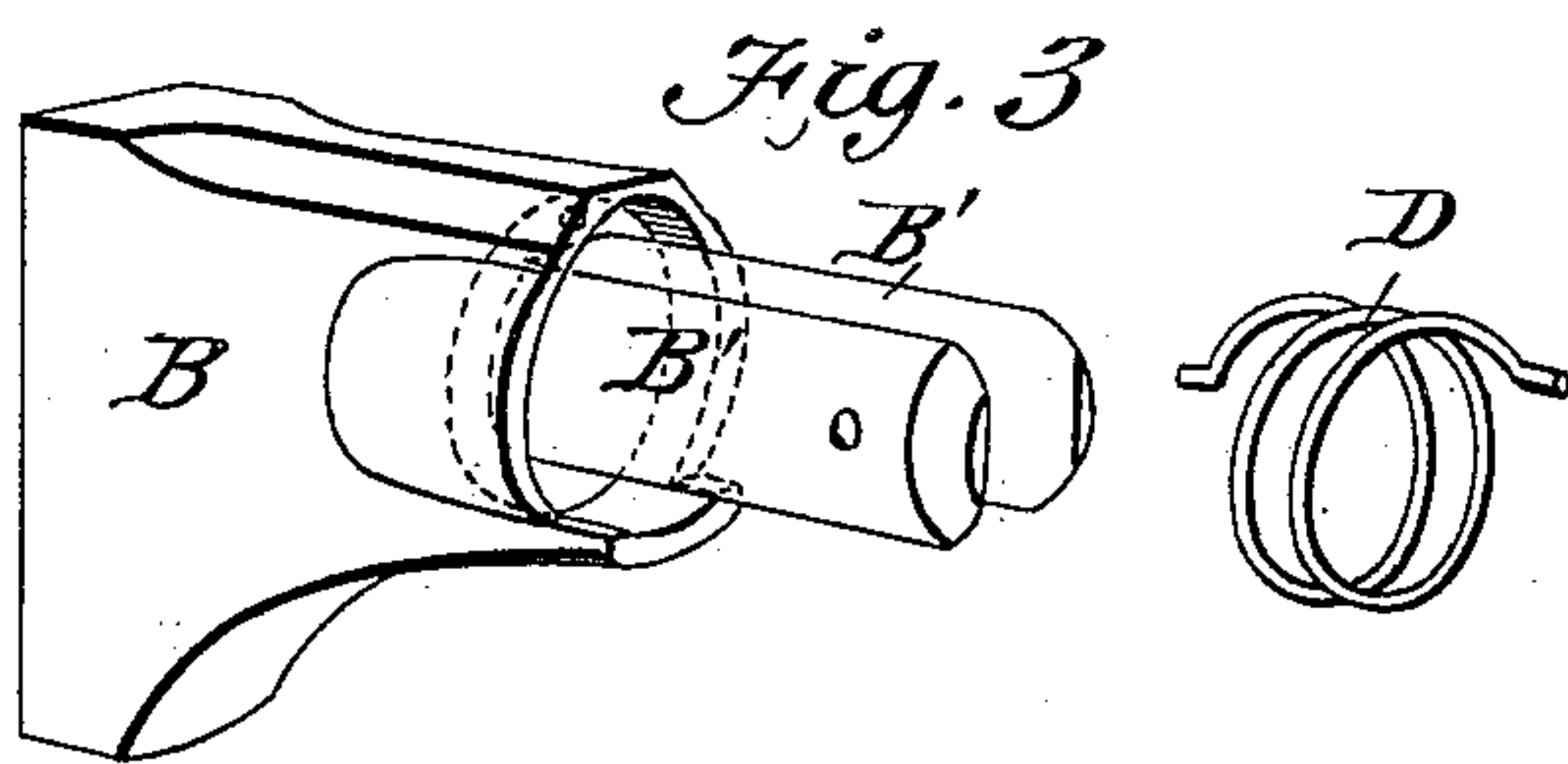
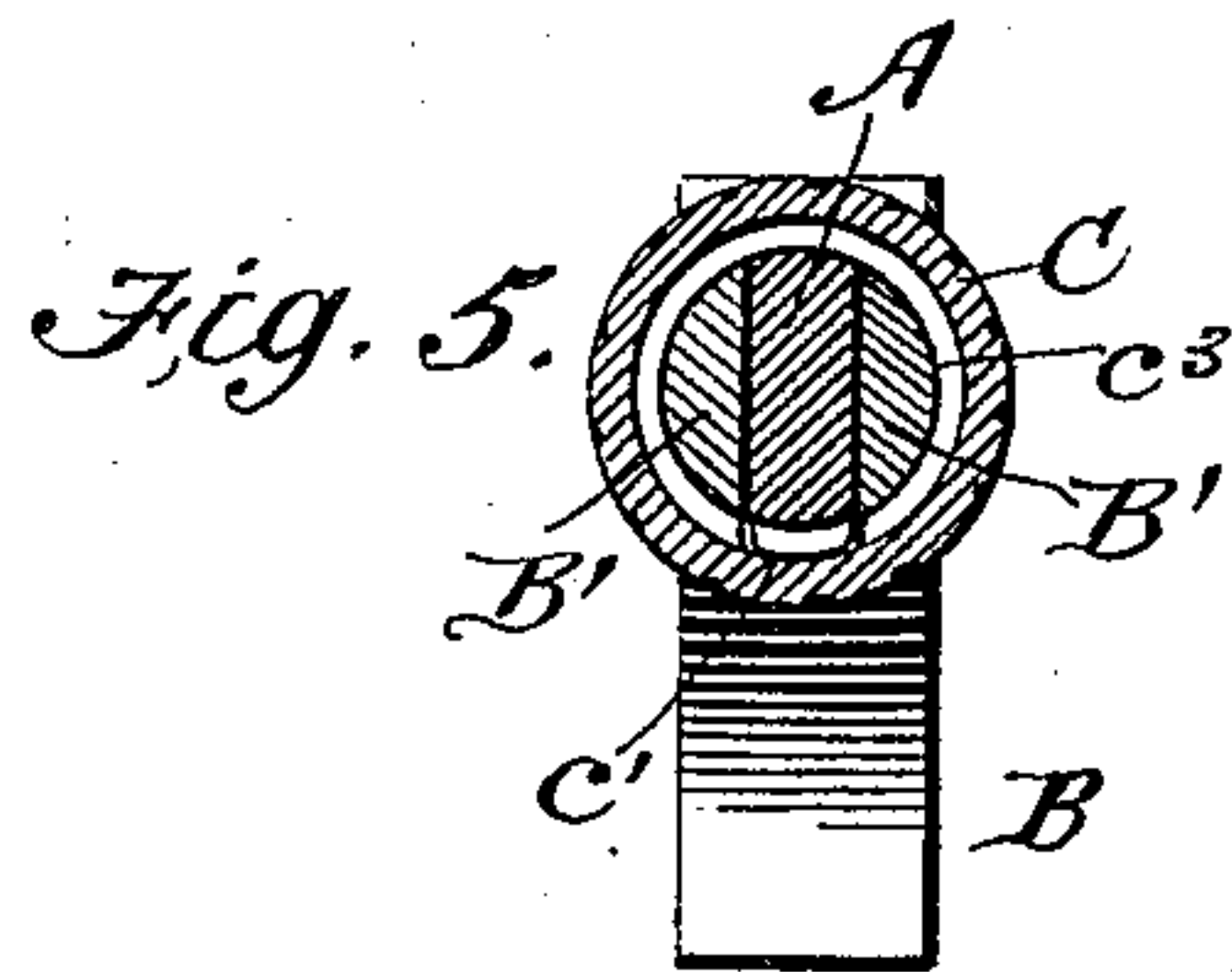
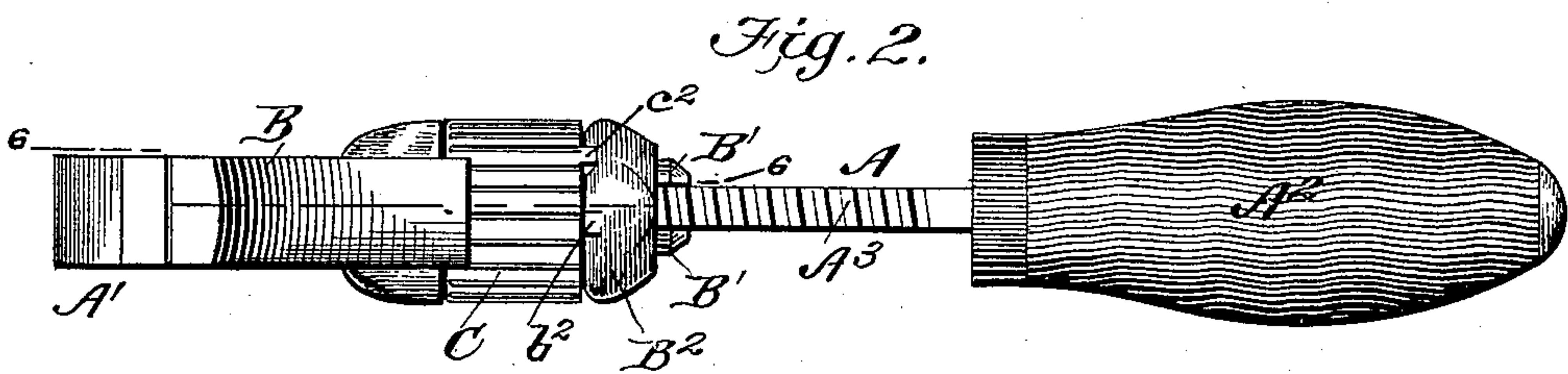
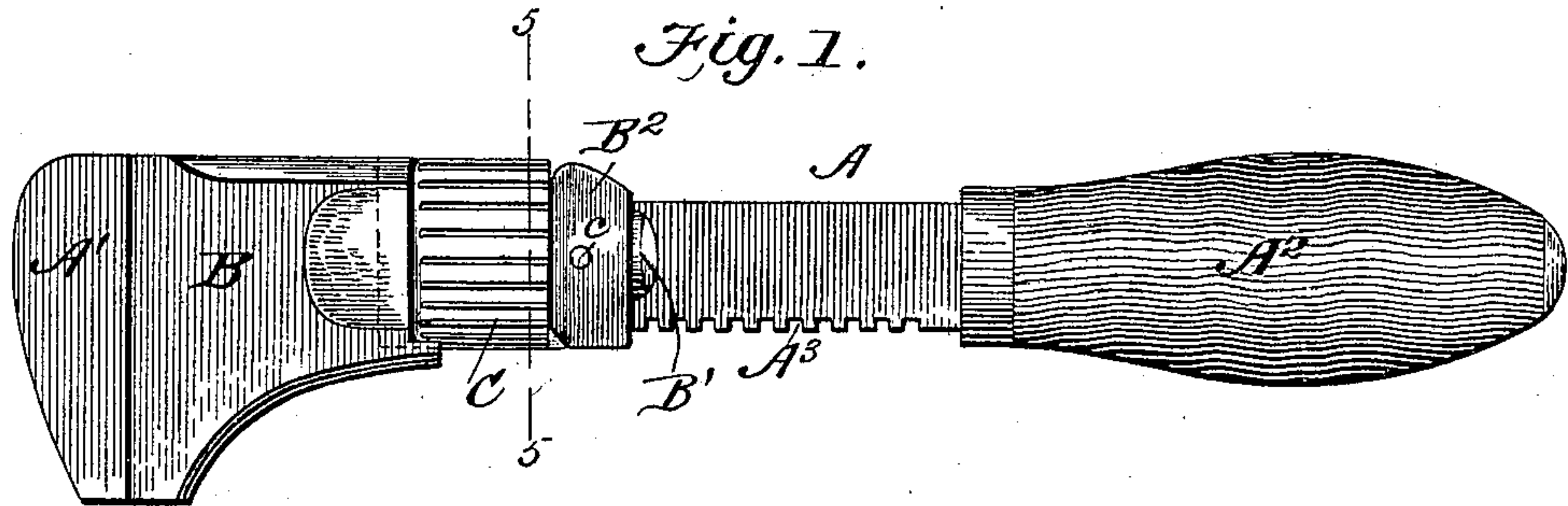
No. 617,998.

Patented Jan. 17, 1899.

F. T. VERHAREN.  
WRENCH.

(Application filed Dec. 28, 1897.)

(No Model.)



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

FRANK T. VERHAREN, OF SPENCER, IOWA, ASSIGNOR OF ONE-THIRD TO  
WILLIAM L. BENDER, OF SAME PLACE.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 617,998, dated January 17, 1899.

Application filed December 28, 1897. Serial No. 663,985. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK T. VERHAREN, a citizen of the United States, residing at Spencer, in the county of Clay and State of Iowa, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

The object of the invention is to provide a wrench in which the movable jaw may be quickly adjusted on the toothed shank by means of an internally-toothed adjusting-sleeve having a longitudinal groove on its inner side, which may be brought into register with the toothed edge of the shank to allow of sliding the movable jaw toward and from the fixed jaw and then by turning the sleeve in an opposite direction causing its teeth or threads to interlock with those on the shank.

A further object is to provide a sleeve which may be given almost a complete turn on the shank, and thus operate the movable jaw within a prescribed limit.

A further object is to rotate the sleeve toward its locking or unlocking position by means of a torsional spring placed between it and the movable jaw.

I accomplish these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved wrench. Fig. 2 is a front edge view. Figs. 3 and 4 are detail views of the adjusting jaw and sleeve removed. Fig. 5 is a transverse section on the line 5 5, Fig. 1; and Fig. 6 is a detail section on the line 6 6, Fig. 2.

A represents the shank of the wrench, provided, as usual, with the fixed jaw A' and the wooden handle A<sup>2</sup>. The front edge of the shank A is provided with inclined rack-teeth A<sup>3</sup>.

B is the sliding jaw, provided with a longitudinal bore shaped to receive and slide on the shank A. From the lower end of the sliding jaw depend parallel arms B' B', which extend along the flat sides of the wrench and are rounded on their outer faces to form a cylindrical bearing-surface for the adjusting-sleeve C, which turns thereon. The sleeve C is held on the arms B' B' by means of a collar B<sup>2</sup>, secured to the lower ends thereof by pins or screws c. The inner edge of the collar B<sup>2</sup> is provided with a stop-lug b<sup>2</sup> in front

of the toothed edge of the shank, and the lower edge of the sleeve is provided with a similar lug c<sup>2</sup>, which contacts with the lug b<sup>2</sup> when the internal longitudinal groove c' in the sleeve is brought into register with the toothed edge of the shank A. The interior of the sleeve C is provided with one or more spiral threads c<sup>3</sup>, which interlock with the teeth A<sup>3</sup> on the edge of the shank A when the sleeve is turned to the right.

Between the adjacent edges of the sleeve C and jaw B in a recess in the latter is placed a torsional spring D, one end of which enters a socket in the sleeve and the other a socket in the jaw. This spring is shown as tending to turn the sleeve C to the right, so as to engage its teeth or threads with the teeth on the shank whenever the sleeve is released, or it may, if preferred, be arranged to normally hold the internal groove c' in register with the toothed edge of the shank.

By having the tooth or thread in the sleeve extend around the interior of the sleeve a considerable adjustment of the movable jaw may be effected without the necessity of bringing the groove c' into register with the teeth of the shank.

The wrench is very simple and there are no parts liable to get out of order however rough its usage may be.

What I claim is—

1. A wrench comprising a shank having a toothed edge, and a fixed jaw, a sliding jaw on the shank, and a rotary spring-pressed sleeve mounted on the movable jaw and having an internal tooth or thread to interlock with the shank-teeth and an internal longitudinal groove to register with the shank-teeth and permit sliding of the sleeve and movable jaw, substantially as set forth.

2. A wrench comprising a shank having a fixed jaw and inclined teeth on one edge, a movable jaw having depending rounded side arms, a sleeve turning on said side arms and provided with an internal spiral tooth or thread and a longitudinal groove, a collar on the lower ends of said arms to hold the sleeve in place and a stop device to prevent rotation of the sleeve in one direction when its groove is brought into register with the toothed edge of the shank, substantially as set forth.

3. A wrench comprising the shank provided

with a fixed jaw and having inclined rack-teeth on one edge, a sliding jaw having depending rounded side arms, a collar on the lower ends of said arms and provided on its  
5 inner edge at its front side with a stop-lug, an internally-threaded longitudinally-grooved sleeve held on said arms by the collar and provided on its lower edge at its grooved side with a stop-lug to engage that on the collar

when said groove registers with the shank- 10 teeth, and a torsional spring between the upper end of the adjusting-sleeve and the adjacent part of the movable jaw, substantially as set forth.

FRANK T. VERHAREN.

Witnesses:

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