

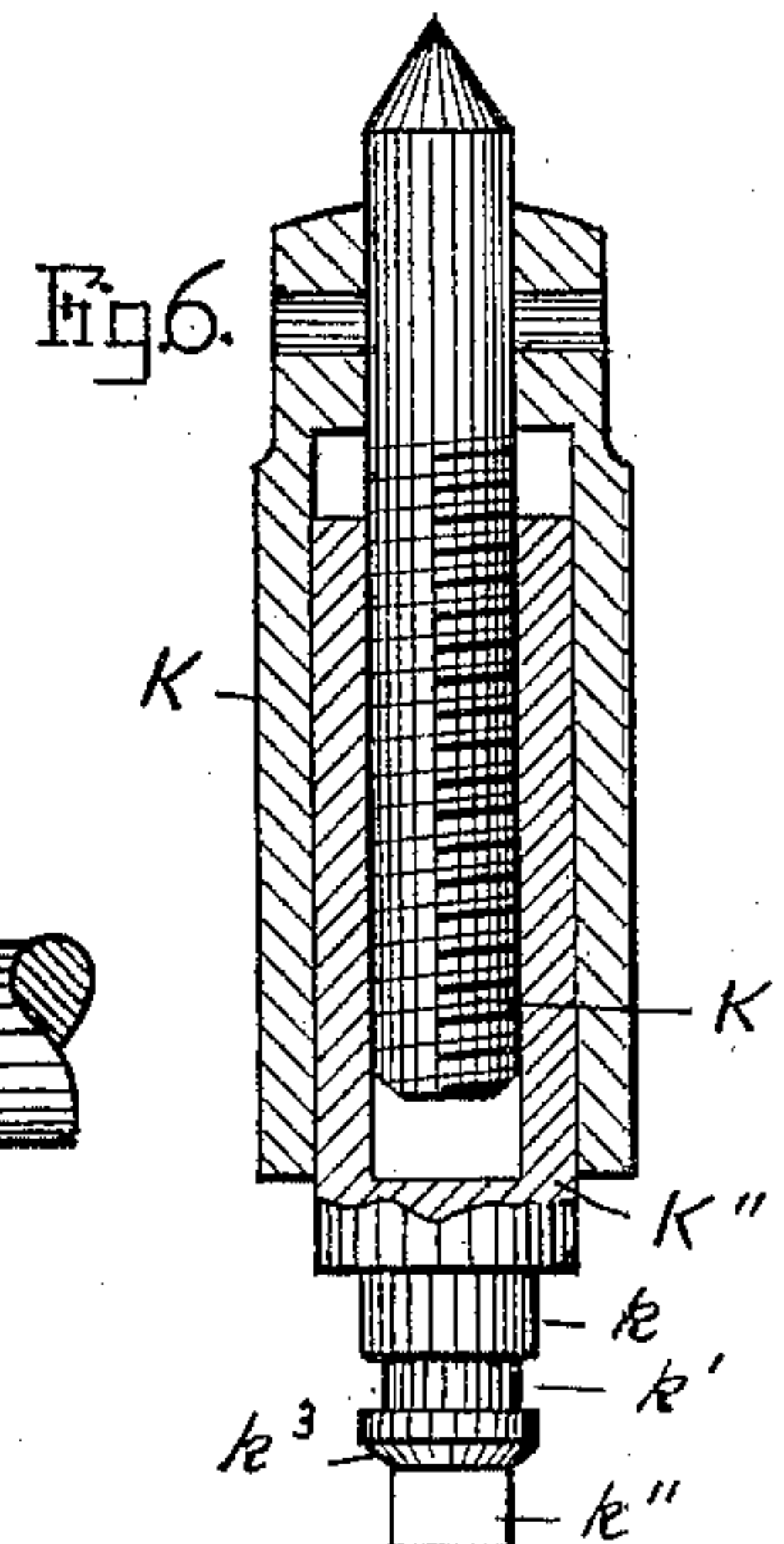
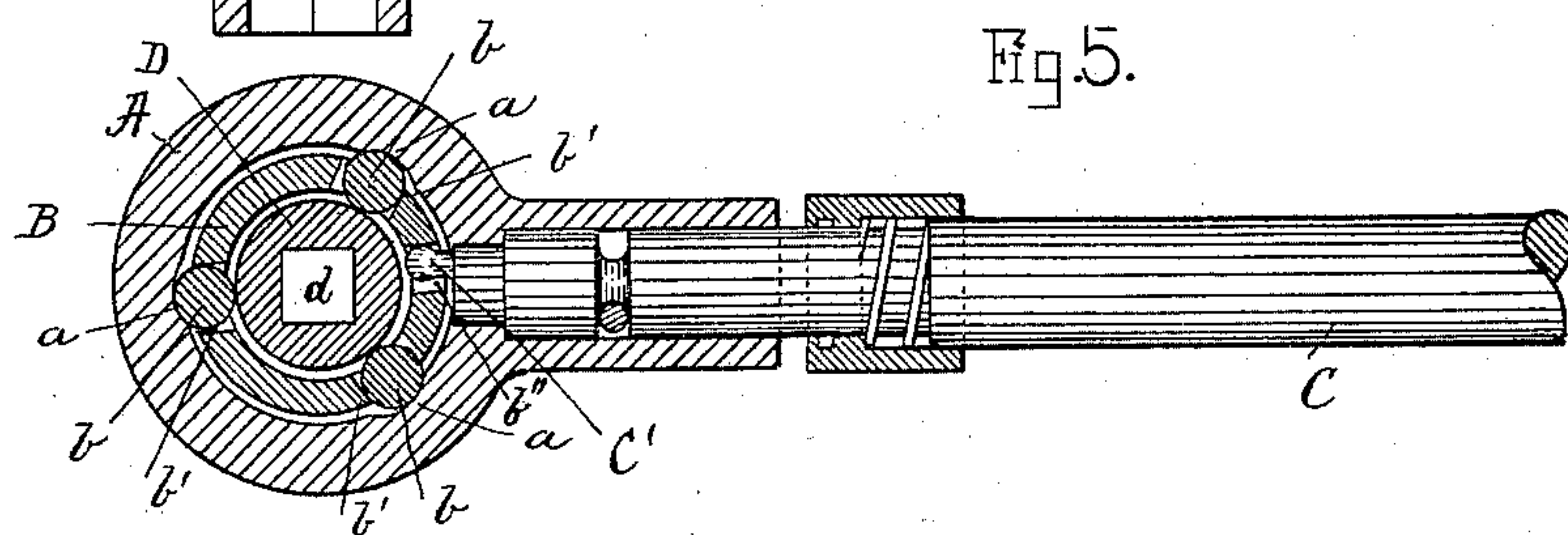
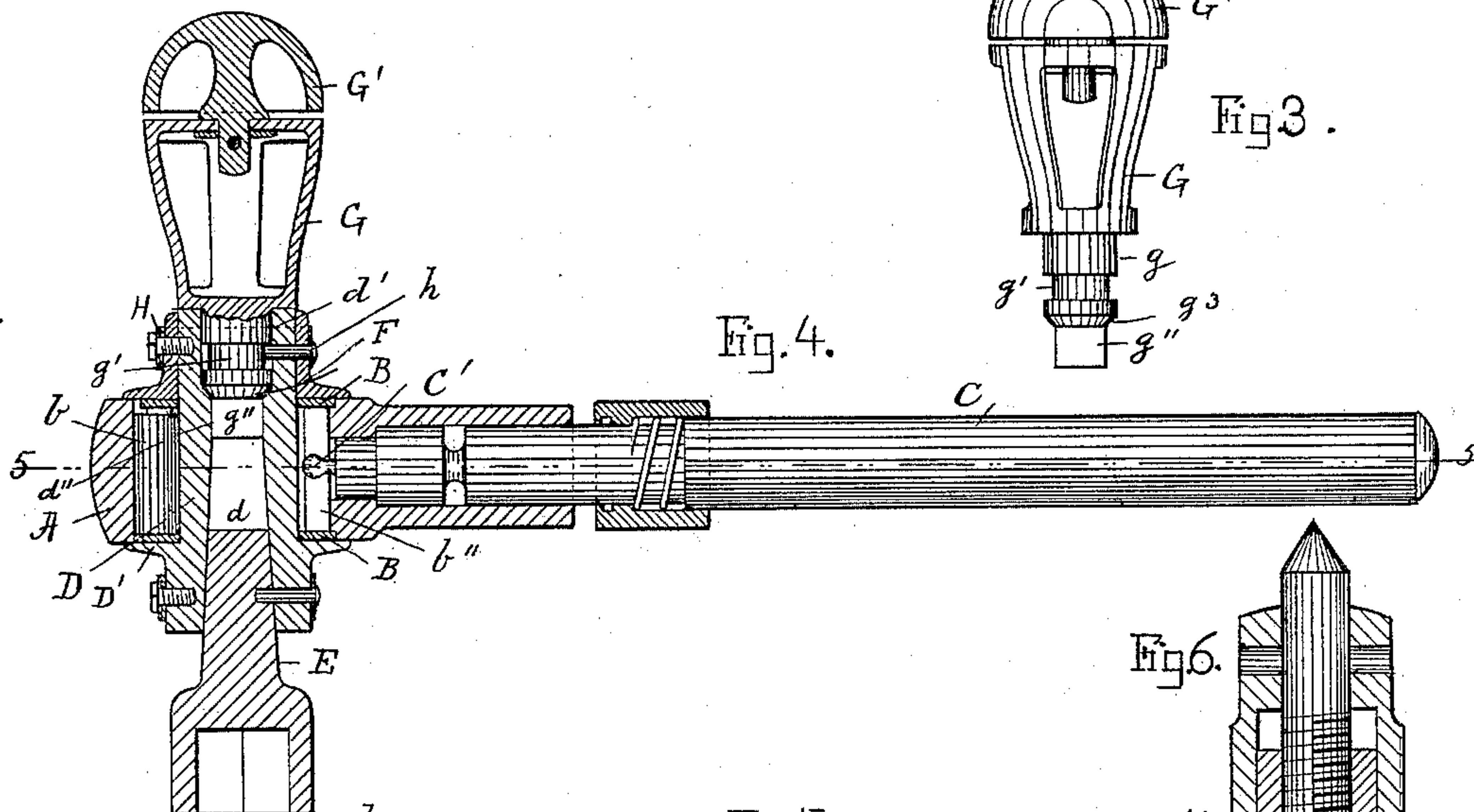
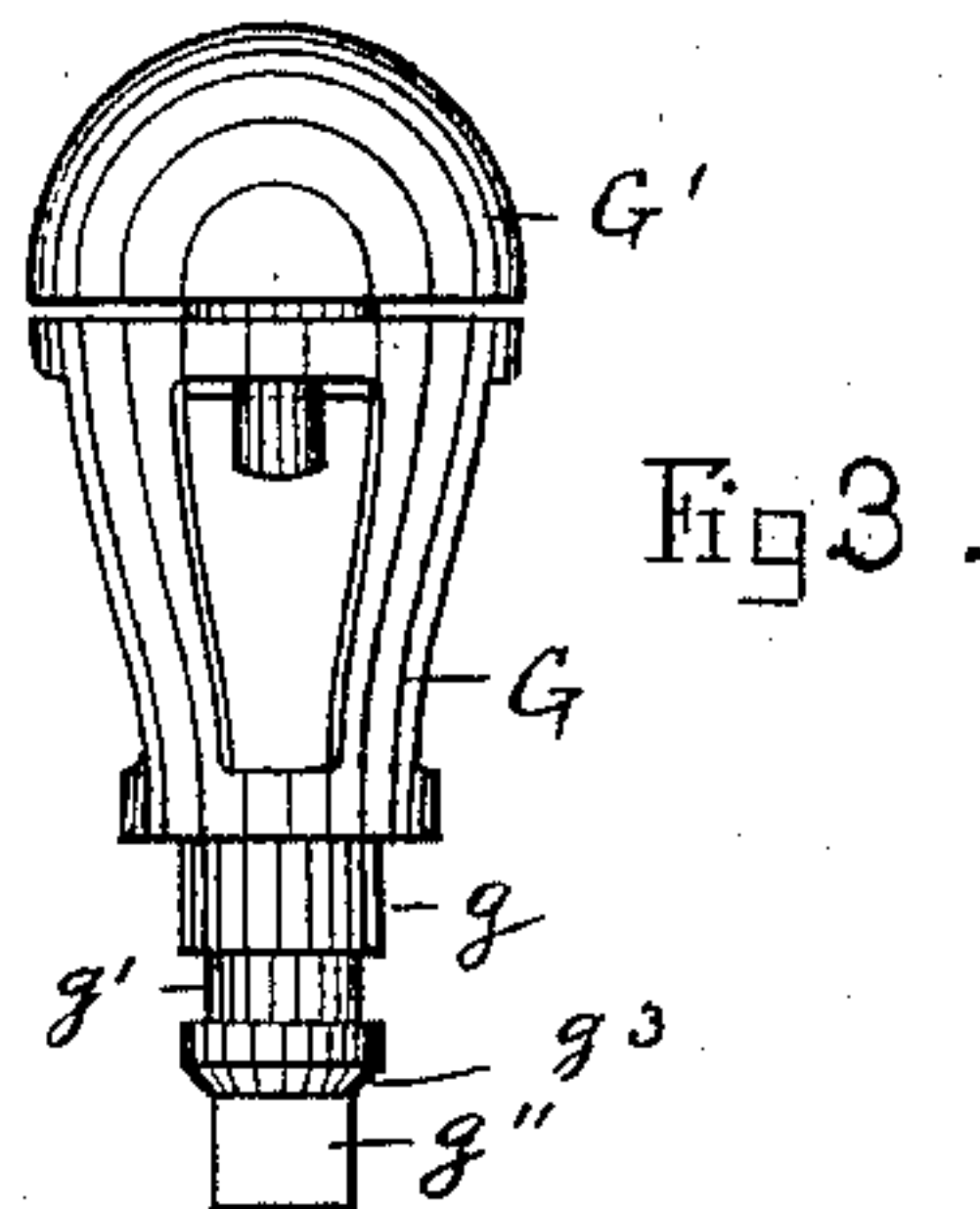
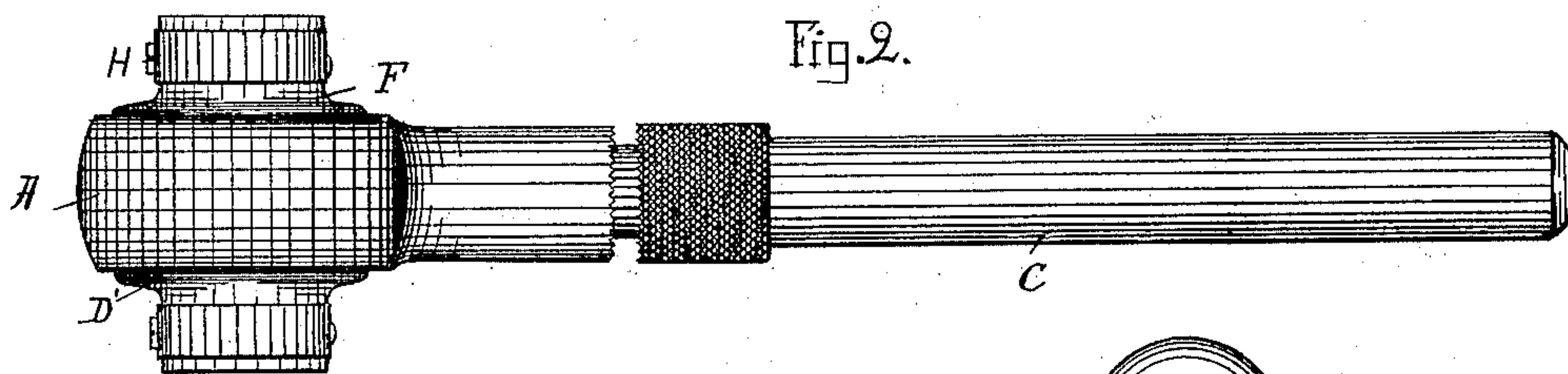
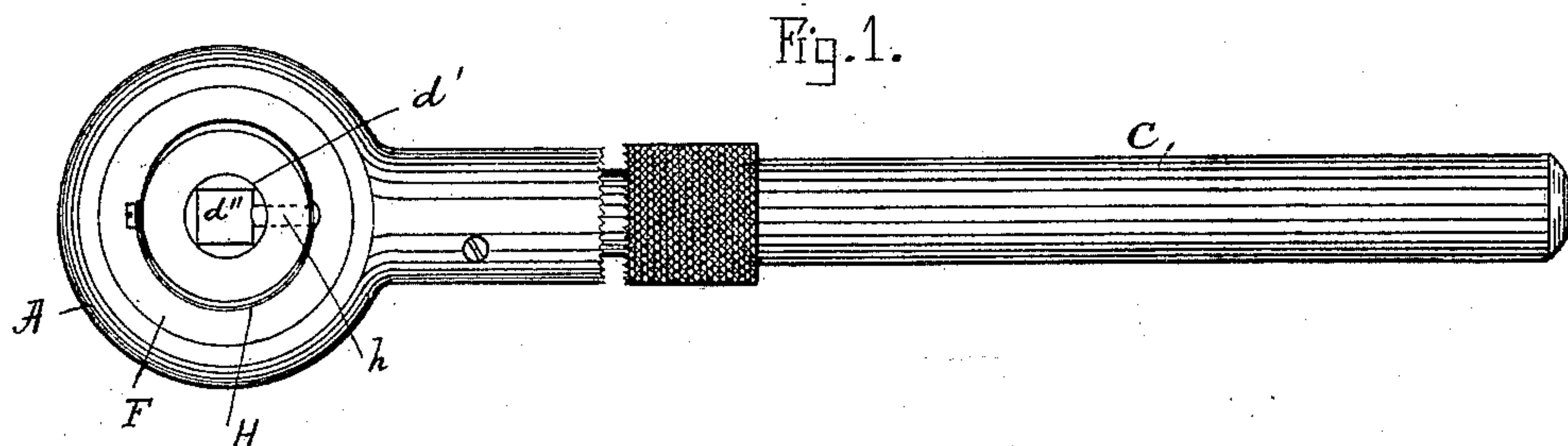
No. 610,773.

Patented Sept. 13, 1898.

B. F. SMITH.
HAND DRILLING MACHINE.

(Application filed Feb. 21, 1898.)

(No Model.)



Witnesses.

Lauritz W. Möller.
Samuel Bradstreet

Inventor.

Benjamin F. Smith.
by Alan Andren, his atty.

UNITED STATES PATENT OFFICE.

BENJAMIN F. SMITH, OF SOMERVILLE, MASSACHUSETTS.

HAND DRILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 610,773, dated September 13, 1898.

Application filed February 21, 1898. Serial No. 671,054. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. SMITH, a citizen of the United States; residing at Somerville, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Hand Drilling-Machines, of which the following is a specification.

This invention relates to improvements in hand drilling devices, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a top plan view of a hand drilling or nut-turning tool to which my attachment is applicable. Fig. 2 represents a side view of Fig. 1. Fig. 3 represents a detail side elevation of the detachable handle which I use in connection with said hand drilling or nut-turning tool. Fig. 4 represents a central vertical section of the hand drilling or nut-turning tool, showing the detachable handle in position for use. Fig. 5 represents a horizontal section on the line 5-5 shown in Fig. 4, and Fig. 6 represents a central longitudinal section of the sleeve and feed-screw which I use in connection with the hand drilling device.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In the drawings, A represents the cam-ring of a hand drilling or nut-turning device, having internal cam-shaped recesses *a a a*, adapted to receive and interlock with rollers *b b b*, located in recesses *b' b' b'* on the ring or follower B as used in friction drill devices.

To the cam-ring A is adjustably secured the lever C, provided at its inner end with a crank C', adapted to enter a recess *b''* in the ring B, and by turning said lever the ring B may be turned to the right or left, as may be desired, for the purpose of turning the drill or its equivalent tool to the right or left, as circumstances may require. Within the ring or follower B and in contact with the rollers *b b b* is arranged the body or drill-holder D, having a central tapering, square, or polygonal recess *d* for receiving the shank of the socket-wrench or drill E, as is common in devices of this kind.

I wish to state that I do not claim in this application any particular hand drilling or

nut-turning device, as my invention is applicable to any well-known construction of such devices, and I have only shown in the drawings one form of such hand drilling device, but wish to state that my attachment is equally well adapted to other forms of hand drilling devices.

In one piece with the lower portion of the body or drill-holder D is made a flange or stop-collar D', as is common in devices of this kind.

Above the cam-ring A is secured a flange or collar F for the purpose of holding said drill-holder D from being detached while in use from the said cam-ring A in the usual manner. In connection with said hand drilling device I use a handle preferably composed of a lower portion G, to which is pivotally connected the pressure-cap G', adapted to be held by the operator in holding the socket-wrench in position on a nut, lag-screw, &c., or for boring purposes when the lever C is oscillated. The handle portion G is provided with a cylindrical shank *g*, adapted to fit into a correspondingly-shaped cylindrical recess *d'* in the body or drill-holder D, and said shank is provided with an annular groove *g'*, adapted to receive the spring-pressed locking-pin *h*, which is secured to a spring-ring H and works in a perforation in the detachable collar F and upper end of the body D, as shown. The lower portion *g''* of the handle-shank *g* is made square or polygonal, so as to fit into a correspondingly-shaped recess *d''* in the interior of the body D, as shown in Figs. 1, 3, and 4. The lower portion of the cylindrical shank *g* is made tapering, as shown at *g³* in Fig. 3, so as to facilitate the insertion of said shank in the body D and causes it to readily interlock with the spring-pressed pin *h* no matter in what position said shank is placed in the perforation in said body D.

When the hand drilling device is used for drilling holes in metal, I use in connection with it a sleeve K and feed-screw K', with internally-screw-threaded spindle K'' of the usual kind, as shown in Fig. 6, and when used in connection with a hand drilling device having a perforated body or drill-holder, as described, I provide the lower end of said spindle K'' with a cylindrical shank *k*, having an annular groove *k'*, tapering surface *k³*, and

lower square end k'' , corresponding in shape and size to the shank on the handle G, so as to make such sleeve and feed-screw interchangeable with the handle as occasion may require.

5 What I wish to secure by Letters Patent and claim is—

In a hand drilling or nut-turning device, the combination with the tool-holder and a lever journaled about said tool-holder and operating to turn the tool-holder in one direction, said tool-holder having a cylindrical recess in its upper end, an angular recess below the cylindrical recess and an inclined annular shoulder between said recesses, of a re-
15 movable handle having a cylindrical shank corresponding to the cylindrical recess, a

conical flange seating on the inclined shoulder, and an angular shank fitting the said angular recess, said shank having an annular groove formed between its cylindrical portion and conical flange, and a spring locking-pin arranged to project through the tool-holder into said groove, substantially as described and for the purpose specified. 20

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses. 25

BENJAMIN F. SMITH.

Witnesses:

ALBAN ANDRÉN,
LAURITZ N. MÖLLER.