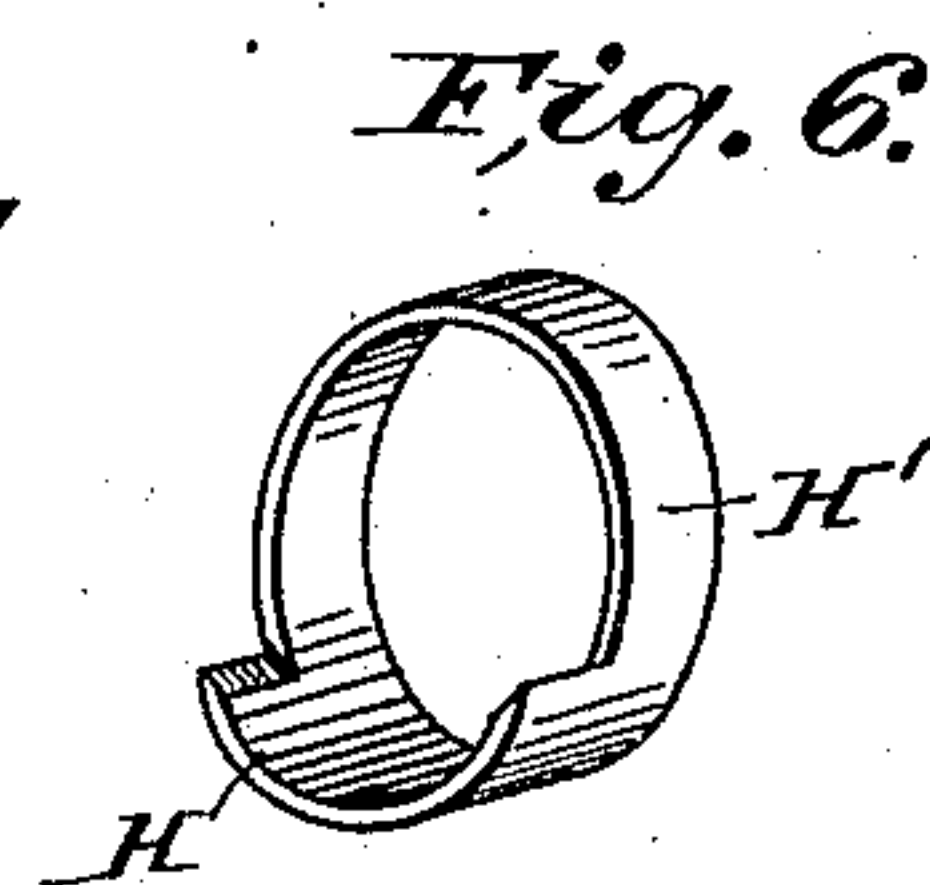
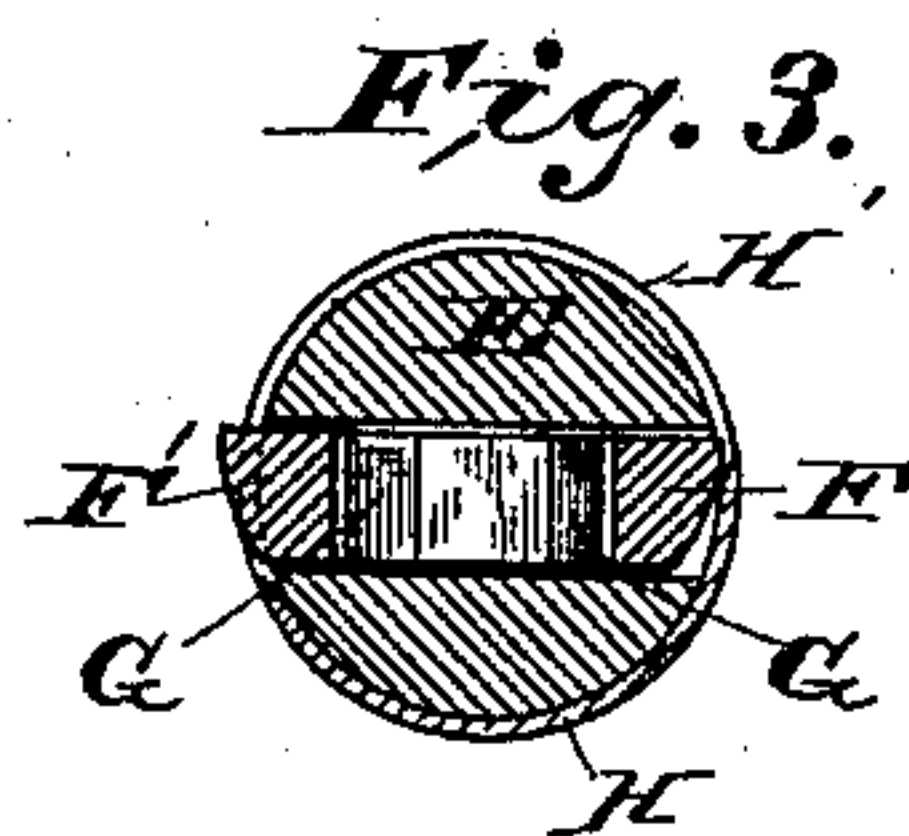
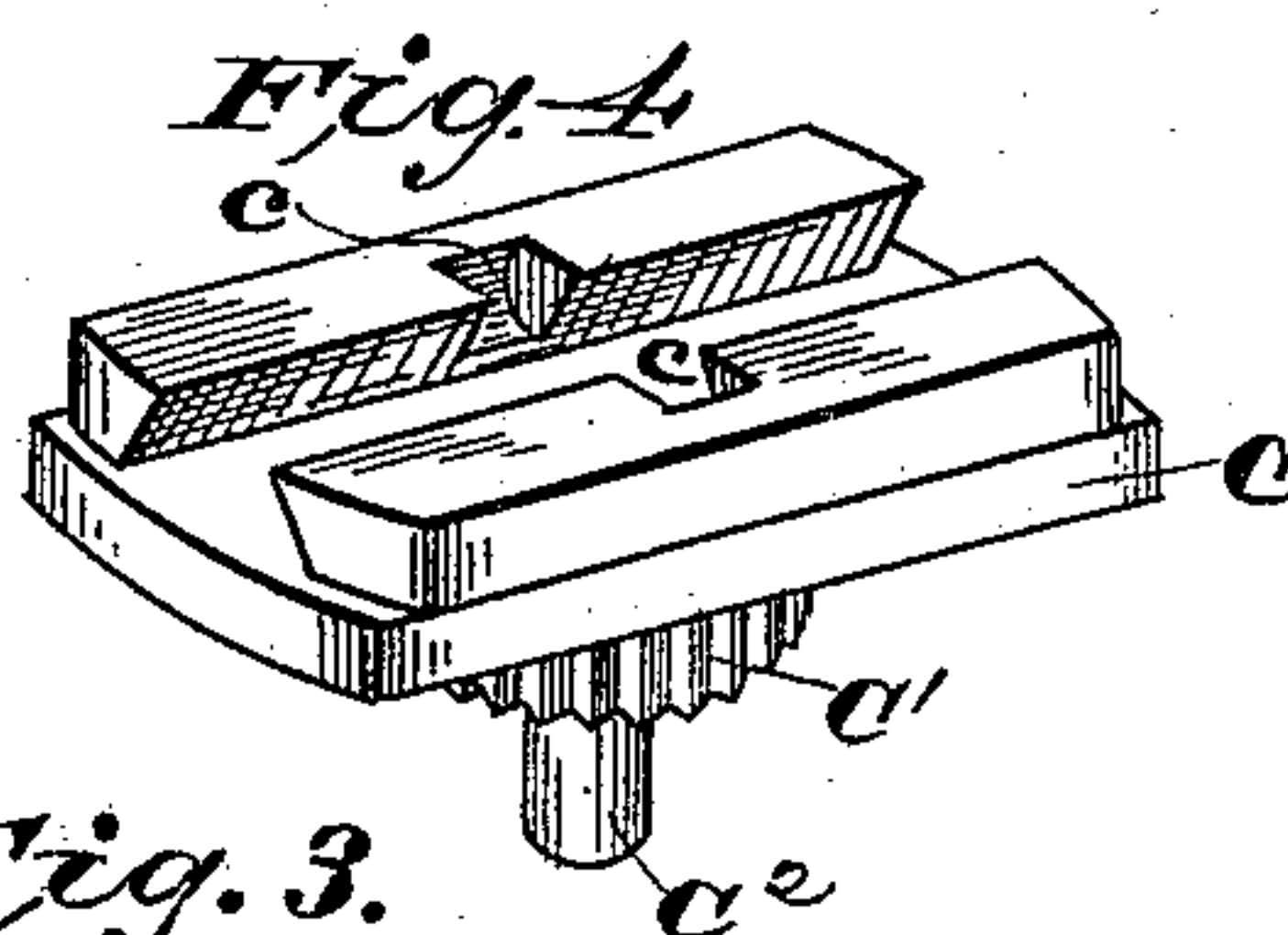
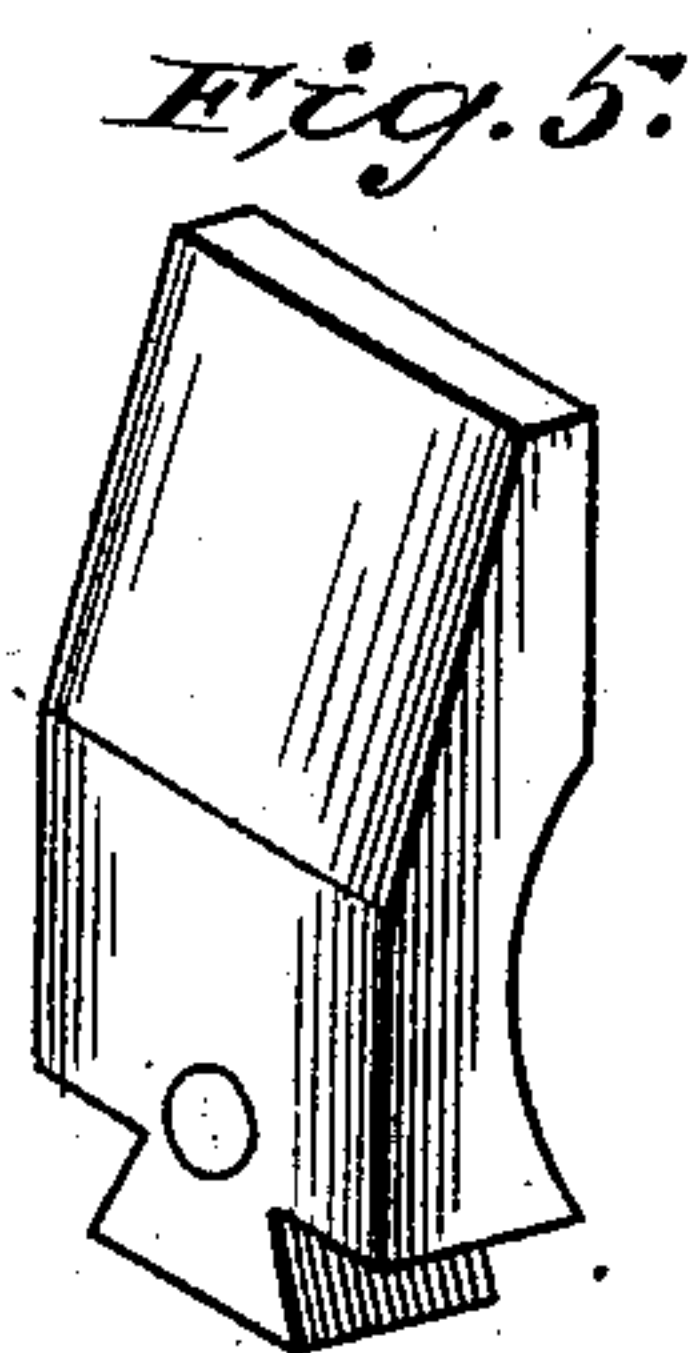
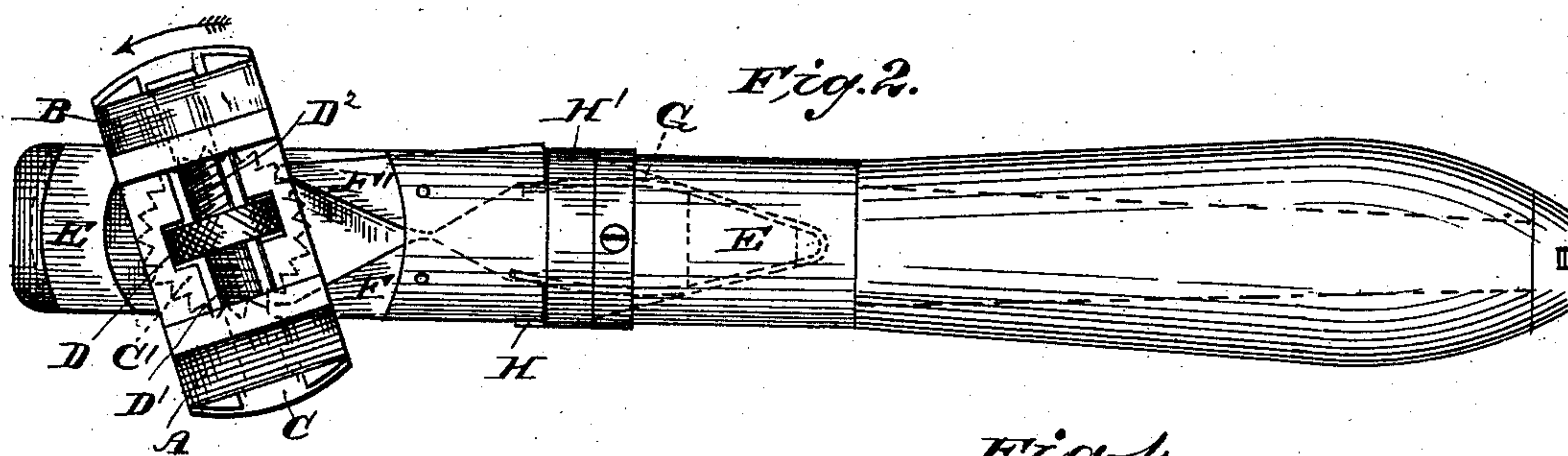
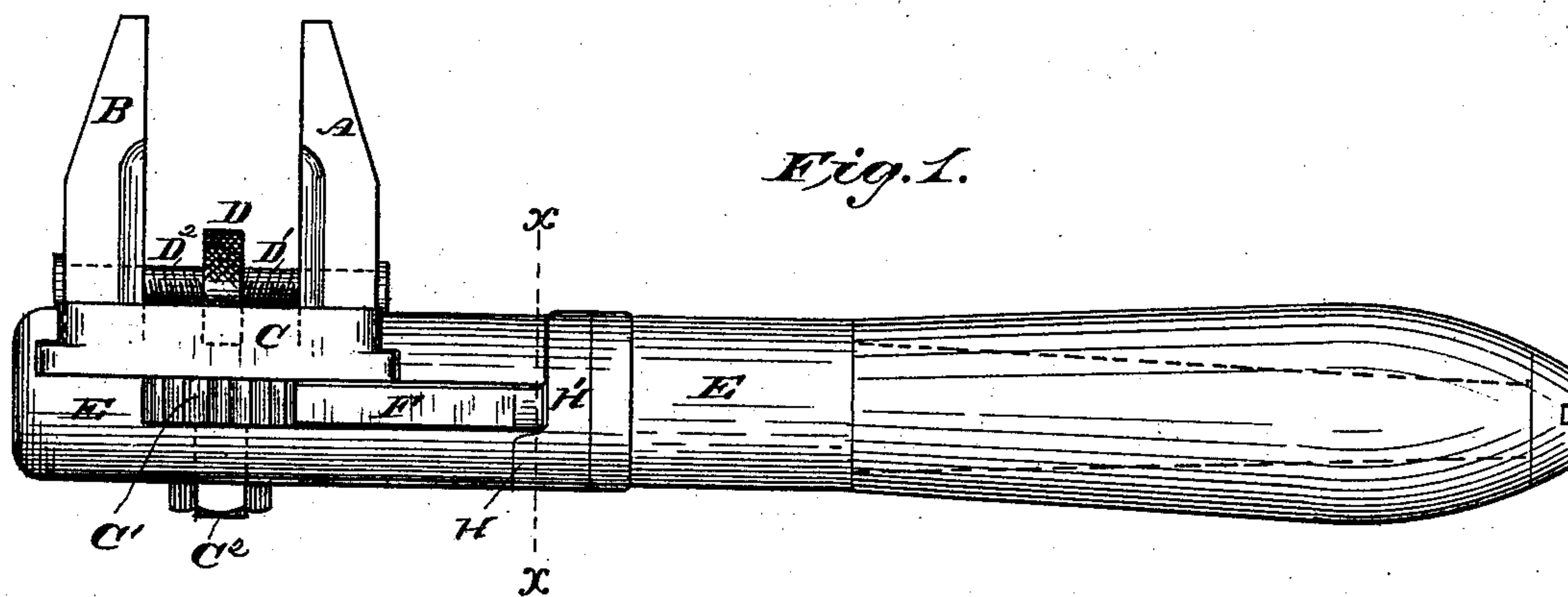


(No Model.)

J. W. DAY.
RATCHET WRENCH.

No. 343,628.

Patented June 15, 1886.



Witnesses:

E. J. Walker
Wm. C. Woodward

Inventor:

John W. Day
By his attorney
O. E. B. B.

UNITED STATES PATENT OFFICE.

JOHN W. DAY, OF YORK SULPHUR SPRINGS, PENNSYLVANIA, ASSIGNOR TO
DAVID M. STEWART, OF SAME PLACE.

RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 343,628, dated June 15, 1886.

Application filed August 19, 1885. Serial No. 174,822. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. DAY, a citizen of the United States, residing at York Sulphur Springs, in the county of Adams and State of Pennsylvania, have invented certain new and useful Improvements in Ratchet-Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that type of ratchet-wrenches in which the head is adapted to be locked against rotation in either or both directions, in order that the wrench may be used either as a ratchet-wrench or as a rigid-jaw wrench; and it consists, mainly, in a flat-sided head and narrow jaws, the width of said head and jaws being limited to the width of the stock, so as to permit the wrench to be used flatwise, like an ordinary monkey-wrench, when desired.

In order that my invention may be clearly understood, I have illustrated in the annexed drawings, and will proceed to describe, a practical wrench with movable jaws embodying all parts thereof.

Figure 1 represents a longitudinal elevation of my improved wrench. Fig. 2 represents a plan view thereof, showing the head and jaws turned and the parts in position to operate the tool as a ratchet-wrench. Fig. 3 represents a cross-section on the line X X of Fig. 1. Fig. 4 represents a perspective view of the head of the jaws with its ratchet-wheel and pivot-stud. Fig. 5 represents a perspective view of the jaws. Fig. 6 represents a perspective view of the pawl-retractor.

The same letters of reference indicate identical parts in all the figures.

The jaws A and B have dovetailed shanks fitting a dovetailed longitudinal guideway in the head C, on which the jaws slide. The jaws are connected together near their bases by a rod having a central milled collar, D, which engages cross-notches *c c* in the head, so that said rod cannot move longitudinally. The end D' of the rod has a right-hand screw-thread, with which it engages a screw-threaded hole in jaw A, while the end D² of the

rod has a left-hand screw-thread, with which it engages a screw-threaded hole in jaw B. Thus, on turning the rod by its milled collar, the jaws may be simultaneously moved in opposite directions on the head to adjust them to the size of any nut within the capacity of the wrench. The extreme ends of the jaw connecting and operating rod may be upset or headed after the jaws have been applied, or other suitable means used to prevent the accidental detachment of either jaw. The head C fits a suitably-formed seat in the stock E, and is centrally pivoted to said stock by a pivoted stud, C², to the projecting end of which a nut is applied for securing the head to the stock. The head, being straight-sided, is so narrow as to be of about the same width as the jaws and stock, so that when such head lies longitudinally along the stock, as shown in Fig. 1, the wrench has substantially the form of and can be used like an ordinary monkey-wrench. The ends of the head may be segmental, and hook under overhanging flanges on the stock, as shown. The head is provided with a fixed ratchet-wheel, C', concentric with its pivot-stud, and the stock carries two pivoted pawls, F and F', adapted to engage ratchet-wheel C' on opposite sides, and prevent it from turning on the stock. The tails of the pawls are spread apart by the ends of a stiff spring, G. (Shown in dotted lines in Fig. 2.)

In order that the ratchet-wheel C' may be released from either pawl and turned by the other, I provide the pawl-retractor H, which is a segment formed on a ring, H'. This ring is fitted to turn on the stock just beyond the tails of the pawls, and the segmental pawl-retractor projects far enough to turn over the said tails. The pawl-retractor is so short that it may be turned into a position releasing both pawls, so that they may then both engage the ratchet-wheel C', when the tool can be operated as an ordinary wrench; but when the tool requires to be operated as a ratchet-wrench the pawl-retractor is turned over to retract one pawl or the other, according as the handle of the wrench requires to be turned from right to left or from left to right. The ends of the retractor and the adjacent corners of the tails of the pawls are chamfered a little, so that the

retractor can easily ride up on said tails. The stock is constructed with a tang, to which a handle is secured in the usual manner.

5 It will be understood that in wrenches intended to operate on one particular size of nuts only the jaws are fixed or formed on the rotatory head.

I am aware that ratchet-wrenches are known in which the ratchet-wheel was combined with
10 two spring-pawls and a pawl-retractor adapted to retract either one of said pawls. Such construction I do not therefore claim, broadly.

I claim as my invention—

15 The combination of the stock, the rotary flat-sided head pivoted thereto and carrying

the adjustable jaws, the said jaws and head having a width not greater than that of the stock, the ratchet-wheel rigidly connected with the rotary head, two pawls pivoted in the stock and engaging the ratchet-wheel on 20 opposite sides, and a cam-ring by which either of said pawls may be disengaged from the ratchet-wheel, substantially as shown and described.

In testimony whereof I affix my signature in 25 presence of two witnesses.

JOHN W. DAY.

Witnesses:

D. M. STEWART,

W. B. BEITZEL.