

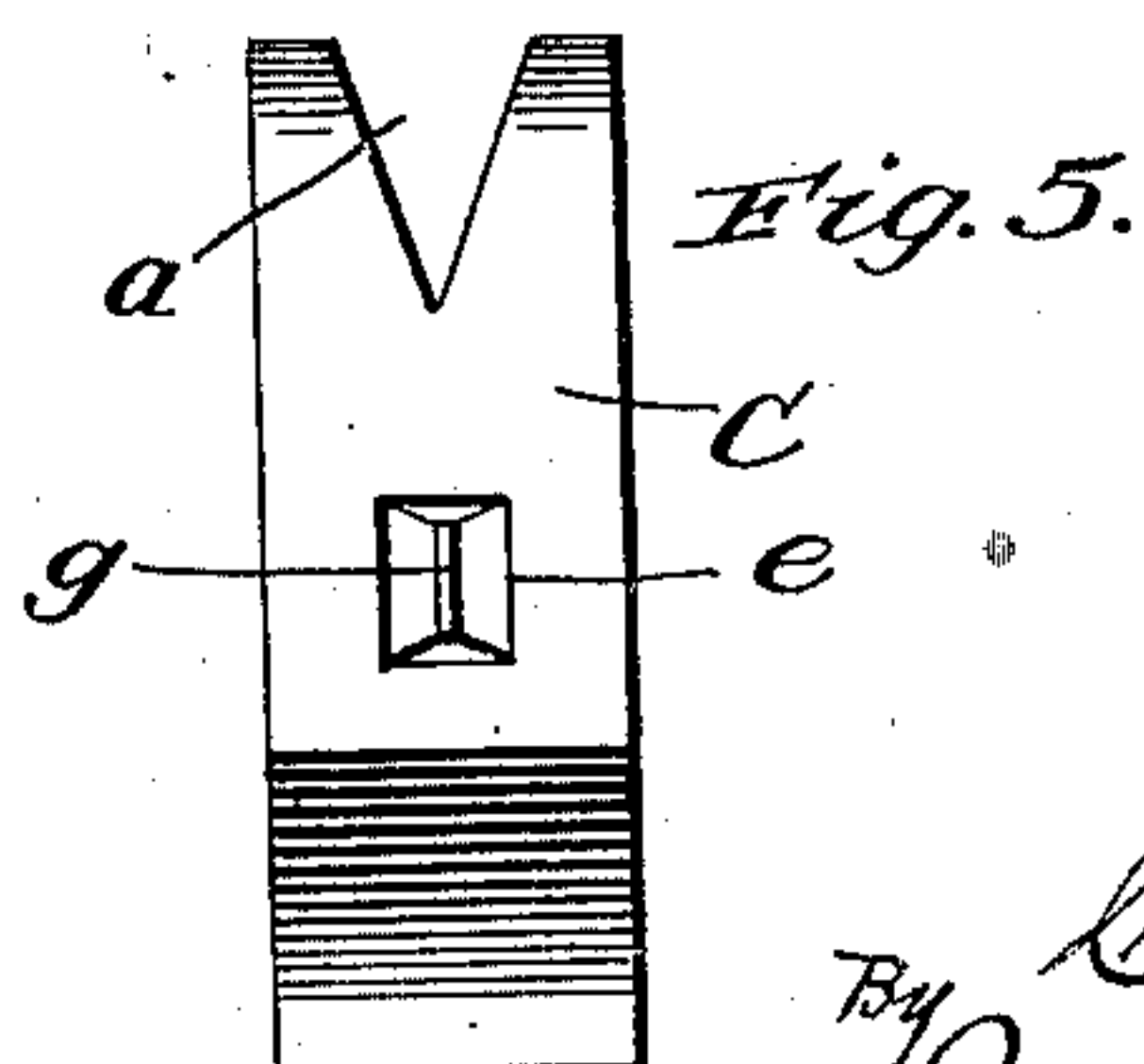
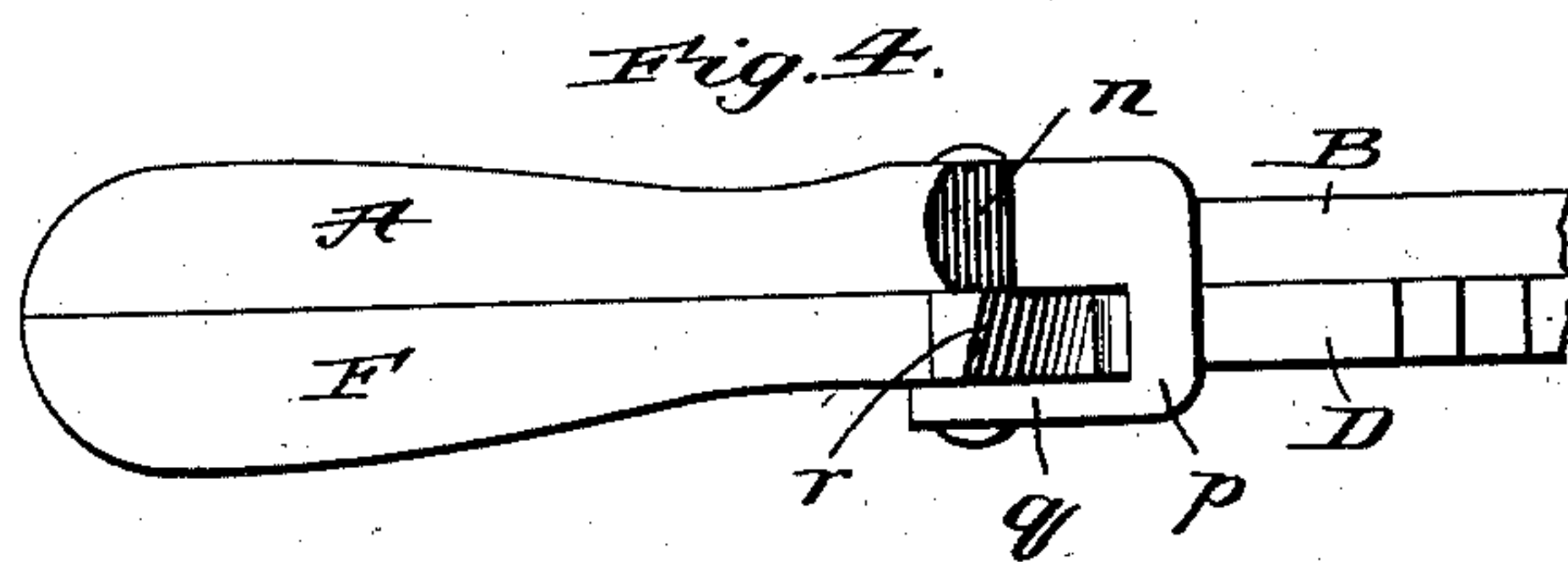
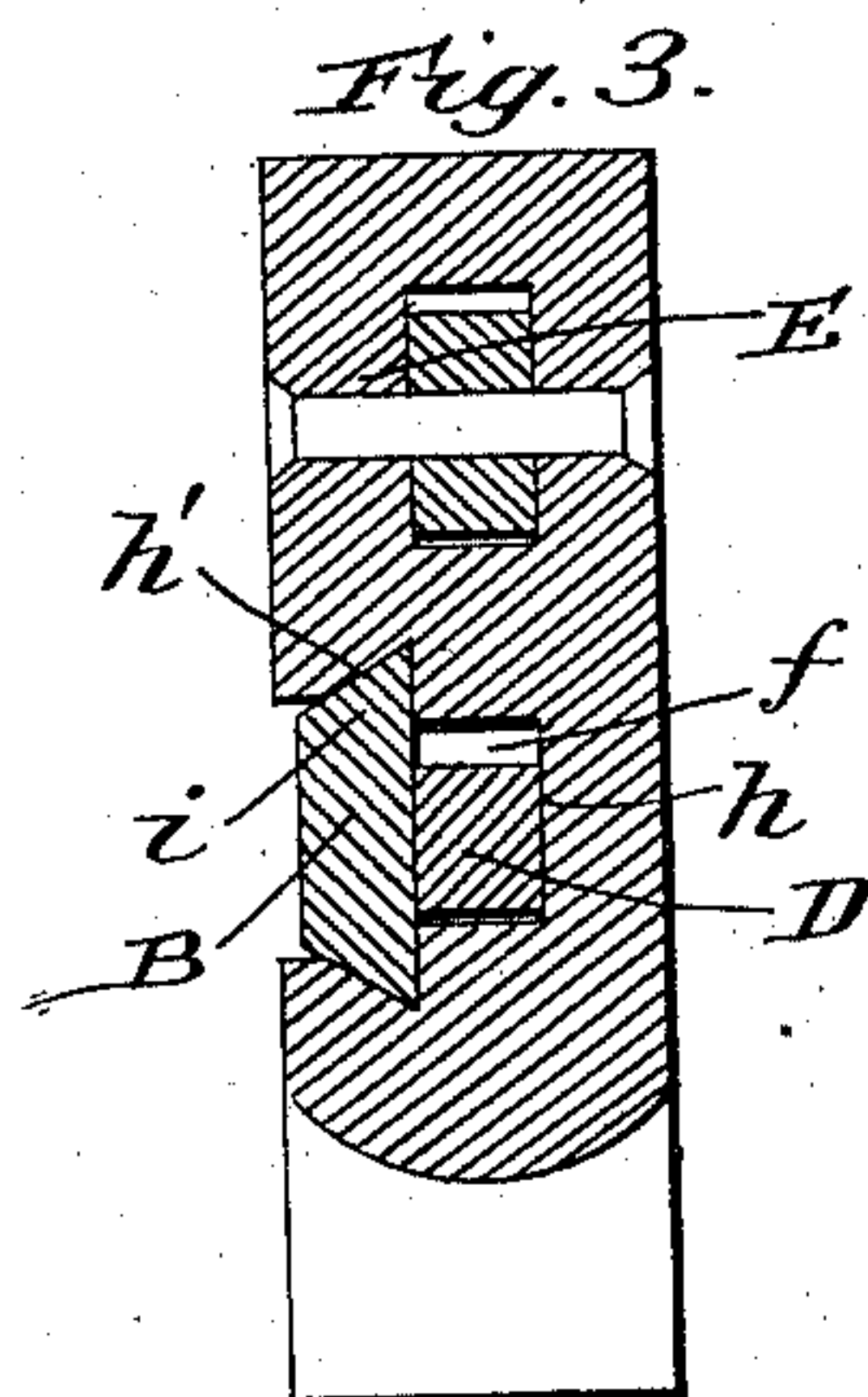
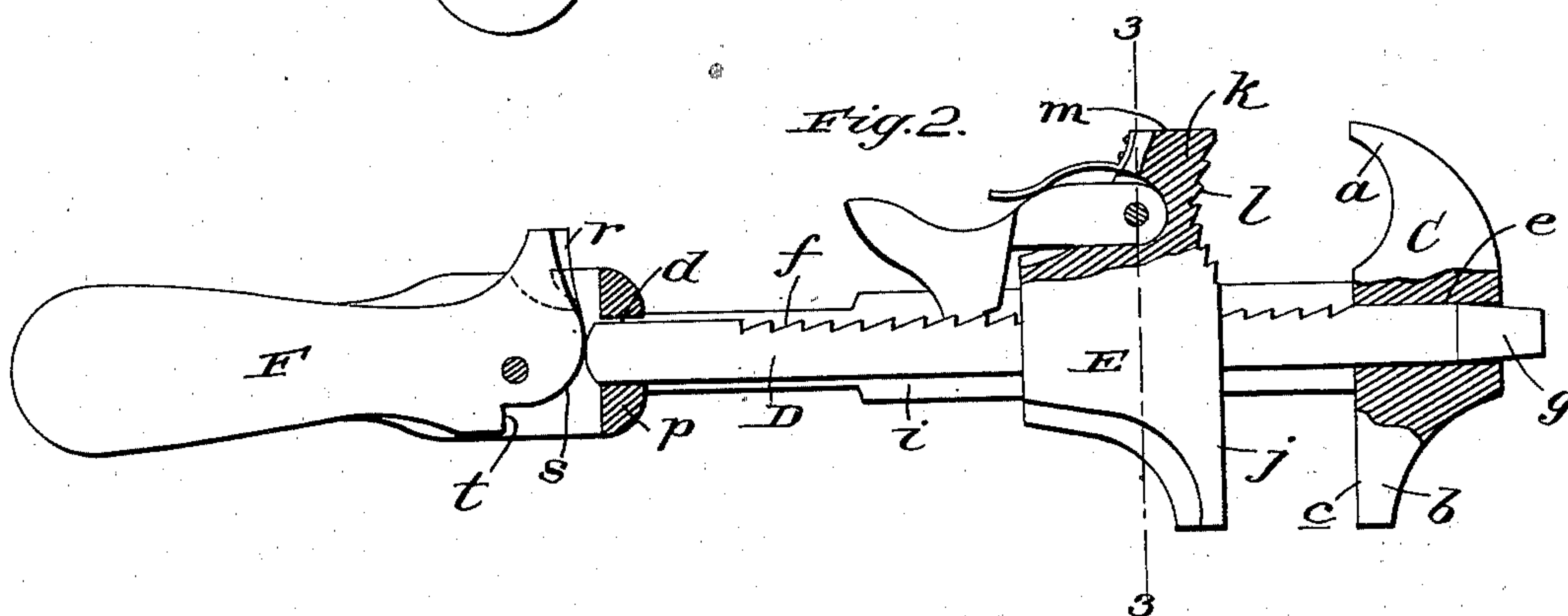
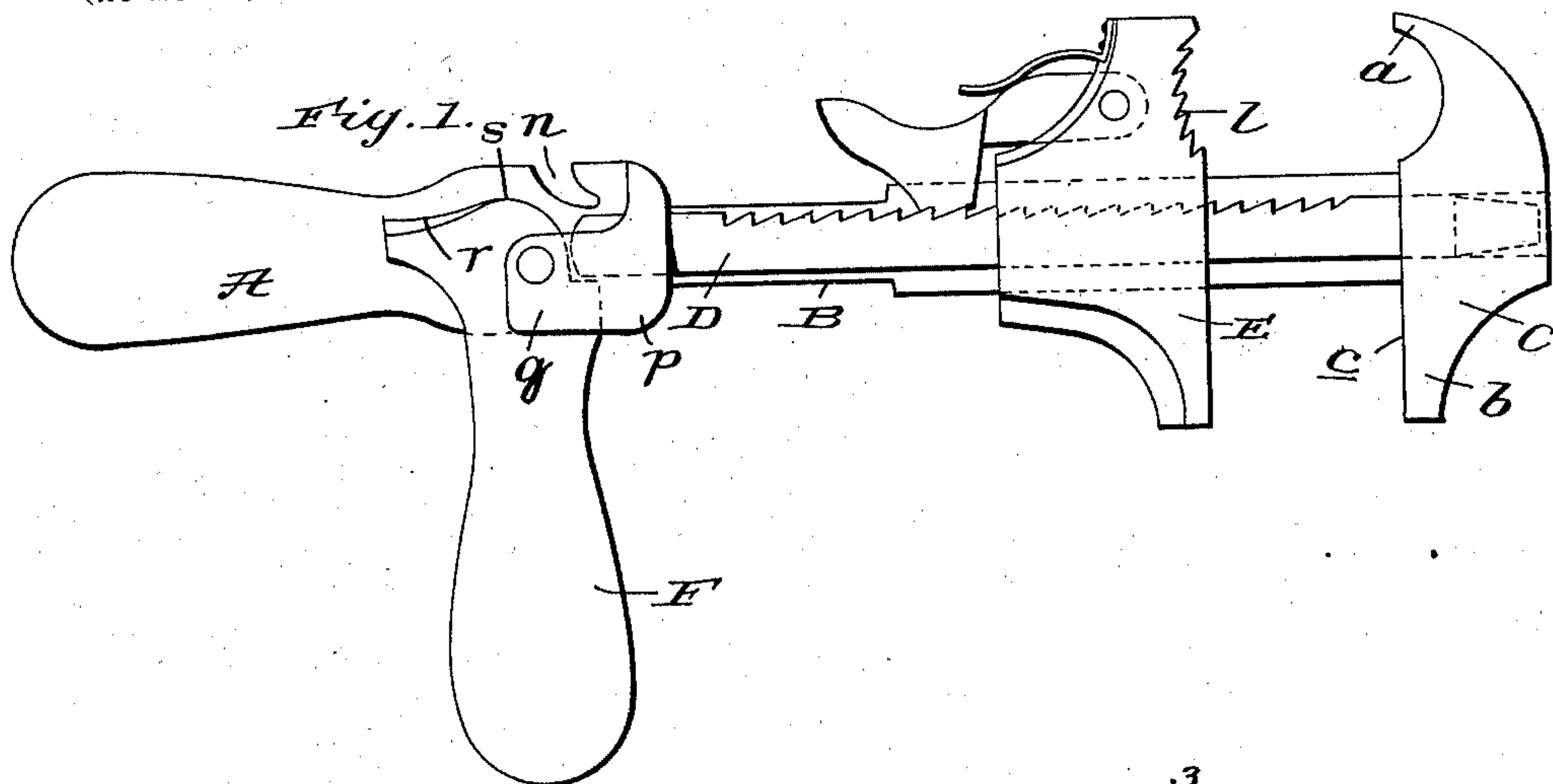
No. 712,552.

Patented Nov. 4, 1902.

C. M. LAMBERT.
WRENCH.

Application filed Jan. 14, 1902.

(No Model.)



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UNITED STATES PATENT OFFICE.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 712,552, dated November 4, 1902.

Application filed January 14, 1902. Serial No. 89,757. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. LAMBERT, a citizen of the United States, residing in the county of Darke and State of Ohio, have
5 invented new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to improvements in wrenches and analogous tools; and it consists
10 in the peculiar construction, novel combinations, and adaptation of parts hereinafter described and claimed,

In the accompanying drawings, Figure 1 is a side elevation of the tool with the movable
15 member of the wire-cutter in a position to permit of the placing of a wire in the notch of the complementary member of said cutter; Fig. 2, a view, partly in side elevation and partly in section, with the movable member
20 of the wire-cutter in alinement with the handle and the forward end of the combined rack and screw-driver bar extended beyond the fixed forward member or head of the nut and pipe wrench and vise; Fig. 3, an enlarged
25 transverse section taken in the plane indicated by the line 3 3 of Fig. 2; Fig. 4, a detail plan of the handle portion of the tool, and Fig. 5 a detail view of the forward end of the tool with a portion of the fixed wrench
30 and vise member or head broken away.

Referring by letter to the said drawings, A is a handle, B a shank, and C a fixed wrench and vise member, which in the preferred embodiment of the invention are formed integral and constitute the body of the tool. Said
35 member C is provided at one side of the shank with claws *a*, which constitute a nail-puller and part of the pipe wrench and vise, and its portion *b* at the opposite side of the shank
40 has a flat inner face *c*, and hence is adapted to form part of the nut-wrench.

D is a longitudinally-adjustable bar arranged alongside the shank B and in guides
45 *d e* of the handle A and wrench member C, respectively, and having rack-teeth *f* and a beveled forward end *g*, whereby it is adapted to serve for the engagement of the detent of the adjustable wrench and vise member or jaw and also as a screw-driver, and E is the
50 said adjustable vise and wrench member.

This member has a recess *h* in one side to receive the shank B and bar D, and a portion
h' of said recess is of dovetail form in cross-section to accommodate the corresponding
55 part *i* of the shank, Fig. 3. By virtue of this construction it will be observed that when the member E is on the shank in advance of the rear end of the dovetail portion *i* thereof it will be securely held against lateral movement off the shank; also, that when the mem-
60 ber E is moved to a position in rear of the rear end of the dovetail portion *i* it may be readily moved in a lateral direction off the shank and the bar D, this to render the tool light when it is desired to use the same simply
65 as a screw-driver, a nail-puller, or a wire-cutter. The member E is further provided with a flat-faced portion *j* at one side of the shank, which serves, in conjunction with the portion
70 *b* of member C, to form the nut-wrench, and at the opposite side of the shank it has a portion *k*, the face of which is concaved and toothed, as indicated by *l*, and hence adapted to form, in conjunction with the claws *a*, a
75 combined pipe wrench and vise. The portion *k* has a flat end *m*, which adapts it for use as a hammer, and it also serves to carry a spring-backed pivoted detent which by engaging the teeth *f* of bar D is adapted to adjustably fix
80 the member E in the position desired to engage and hold a nut or pipe.

The handle A is provided in its upper edge at a point adjacent to its forward end with a notch *n* to receive a wire, and at said forward
85 end it has a lateral portion *p*, in which the guide-aperture *d* is formed. Said portion *p* terminates in a rearwardly-extending arm *q*, between which and the main portion of the handle is pivotally connected the movable
90 member F of the wire-cutter. This member F has a cutting or shear edge *r*, a cam portion *s*, and a shoulder *t*, Fig. 2. When a piece of wire is placed in the notch *n* of handle A, which constitutes one member of the
95 wire-cutter, and the member F is moved from the position shown in Fig. 1 to that shown in Fig. 2, the edge *r* will obviously operate to cut the wire. The cam portion *s* operates to move the bar D forwardly when the
100 member F is moved as stated, and thereby

extends the end *g* of said bar beyond the forward side of the member C, and it also serves to hold the said bar D against casual backward movement incident to the use of the implement as a wrench or a vise. The shoulder *g* serves by engaging the bar D to limit the movement of member F when the same is swung down into the position shown in Fig. 1.

In using the improved tool as a wrench the jaw E is first adjusted against the article to be turned, after which the member F is moved into the position shown in Fig. 2. When this is done, it will be observed that the jaw or member E will be tightened and securely held against the article, with the result that liability of the same slipping is reduced to a minimum. When it is desired to use the tool as a nail-puller, the member F is moved down into the position shown in Fig. 1 and the bar D is pushed back so that its beveled end *g* will be sheathed in and protected by the wrench member or head C.

It will be readily appreciated from the foregoing that notwithstanding the many purposes which it is adapted to serve my improved tool is no more cumbersome than an ordinary monkey-wrench and but little more costly.

I have entered into a detailed description of the construction and relative arrangement of parts embraced in the present and preferred embodiment of my invention in order to impart a full, clear, and exact understanding of the same. I do not desire, however, to be understood as confining myself to such specific construction and relative arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my invention.

Having described my invention, what I

claim, and desire to secure by Letters Patent, is—

1. In a tool, the combination of a body made up of a handle, a fixed wrench member or head, and a shank interposed between said handle and wrench member or head, and having the forward portion *i* of comparatively large size in cross-section; of a longitudinally-movable, toothed bar guided in the body, a wrench member or jaw movable on and removable from the shank and toothed bar and equipped with means for engaging the latter; said member or jaw having a recess in one side receiving the shank and toothed bar and provided with an enlarged portion receiving the enlarged portion of the shank, and a movable member connected to the handle and having a portion arranged to engage the toothed bar and move the same forwardly, and hold it against casual rearward movement.

2. In a tool, the combination of a body made up of a handle, a fixed wrench member or head, and a shank interposed between said handle and wrench member or head; of a longitudinally-movable, toothed bar guided in the body, a wrench member or jaw movable on the shank and toothed bar and equipped with means for engaging the latter, and a movable member connected to the handle and having a portion arranged to engage the longitudinally-movable bar and move the same forwardly and hold it against casual rearward movement.

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

CHARLES M. LAMBERT.

Witnesses:

E. A. HARRISON,

WILLIAM W. FOWLER.