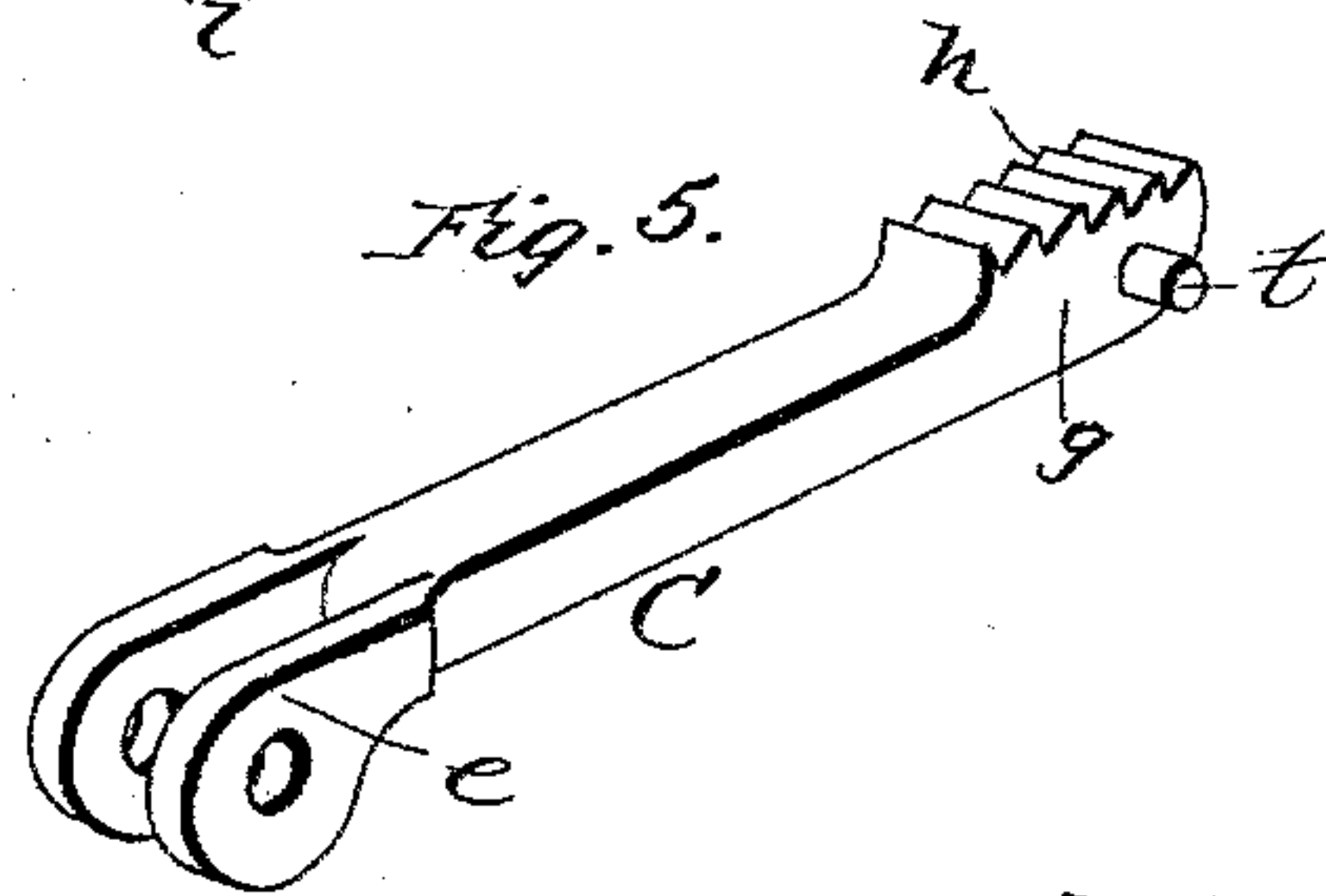
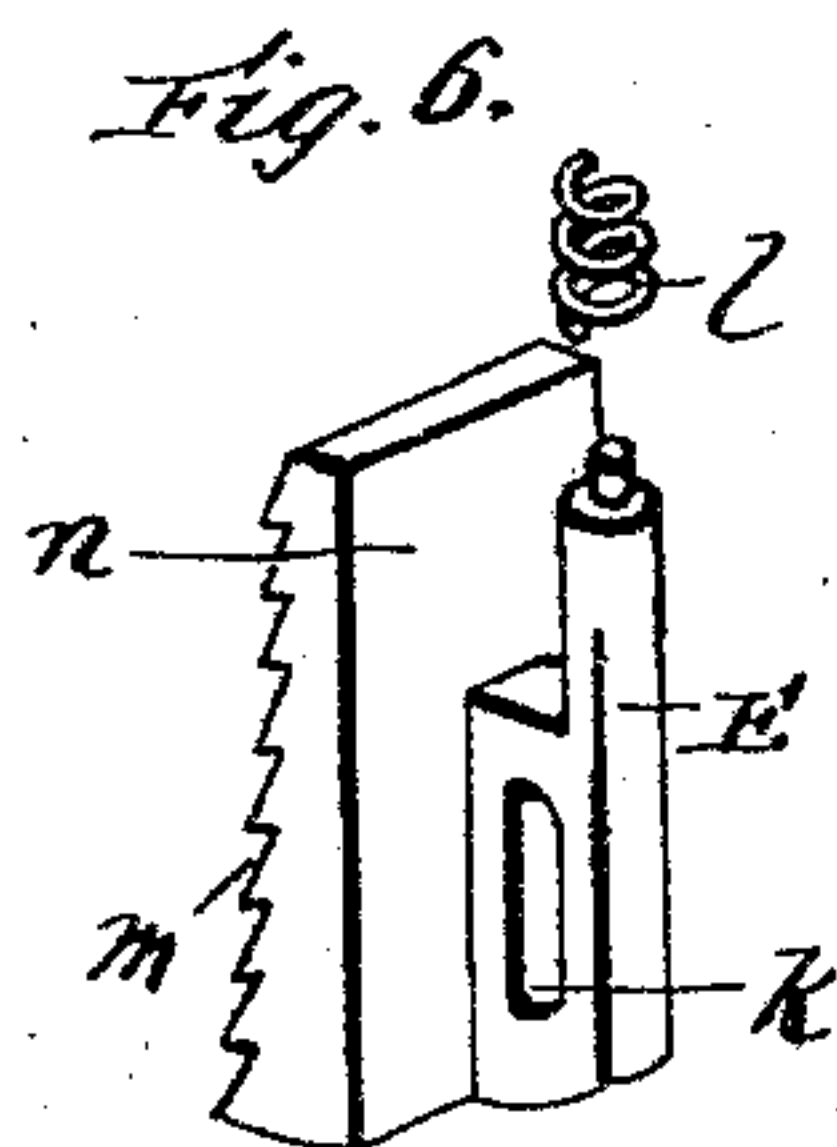
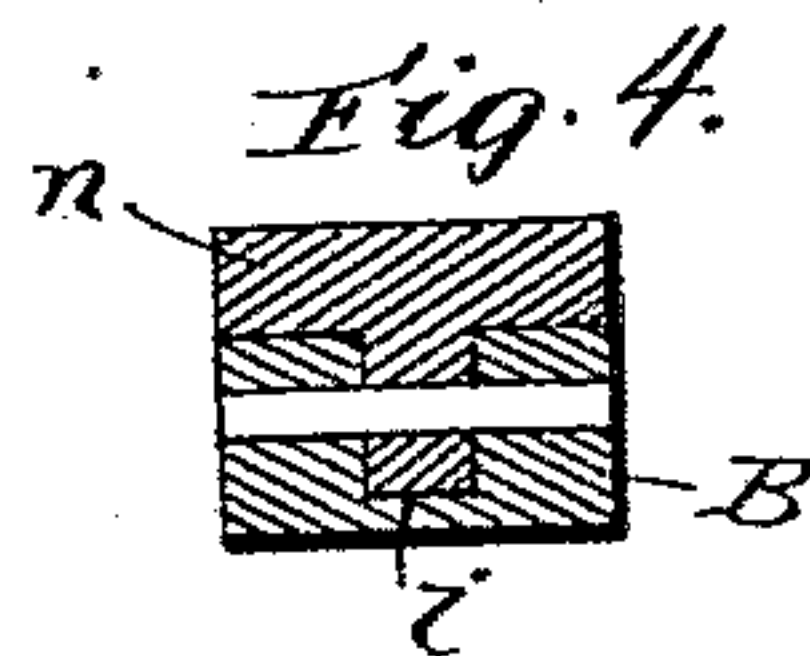
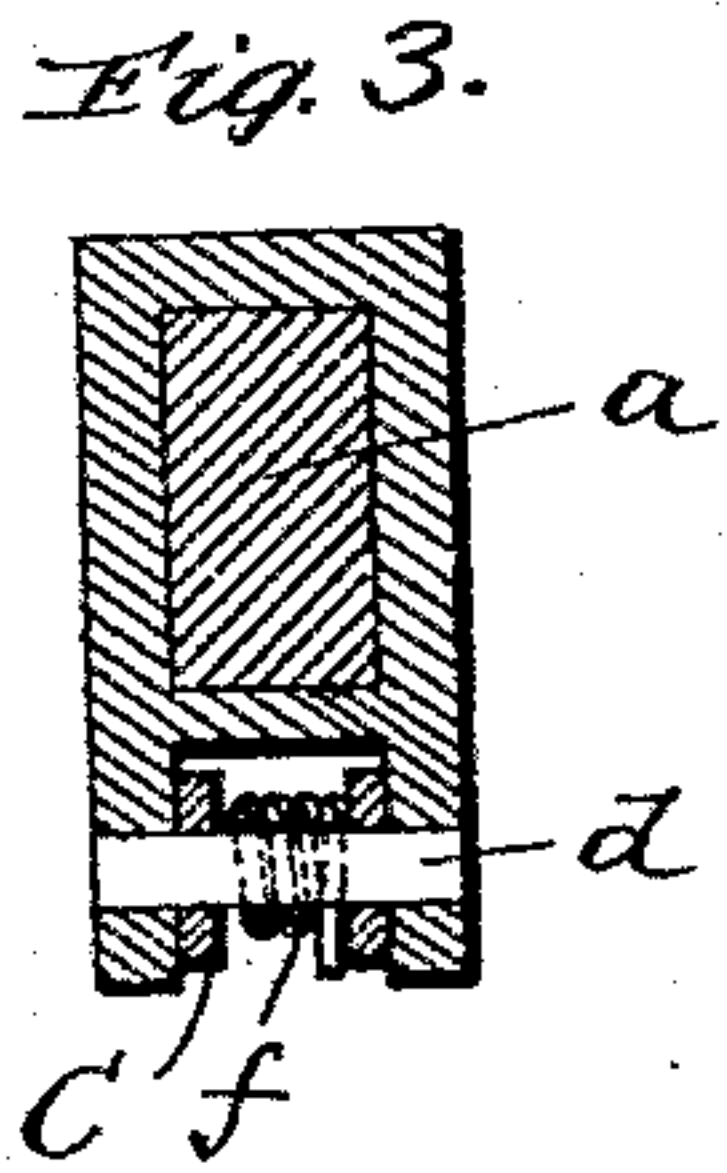
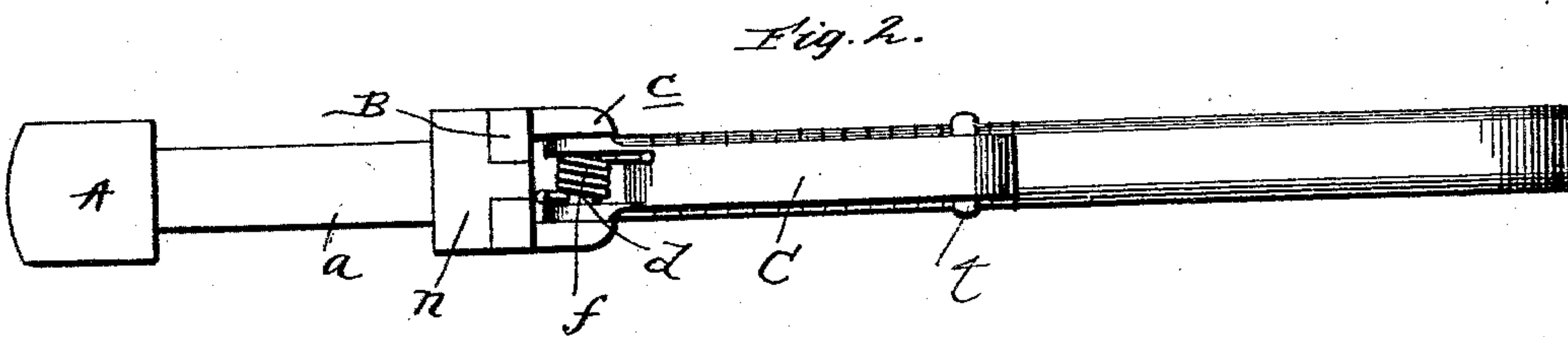
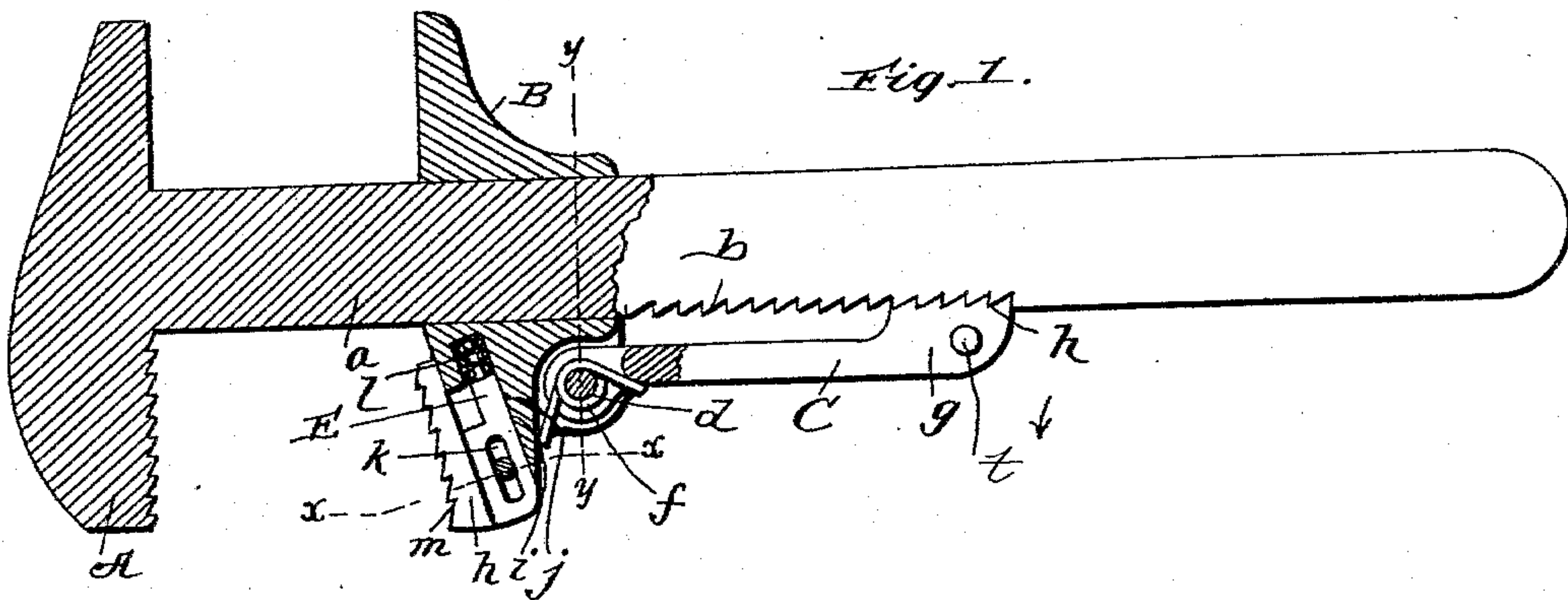


(No Model.)

C. BLACK.  
WRENCH.

No. 546,295.

Patented Sept. 17, 1895.



Witnesses:  
C. H. Raeder  
H. F. Matthews.

Inventor  
Christian Black  
By James J. Sheehy  
Attorney.



# UNITED STATES PATENT OFFICE.

CHRISTIAN BLACK, OF GREEN COVE SPRINGS, FLORIDA.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 546,295, dated September 17, 1895.

Application filed May 20, 1895. Serial No. 549,971. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTIAN BLACK, a citizen of the United States, residing at Green Cove Springs, in the county of Clay and State of Florida, have invented certain new and useful Improvements in Wrenches; and I do 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.

My invention relates to improvements in sliding-jaw wrenches; and it has for its main object to provide such a wrench embodying an exceedingly cheap, simple, and easily-operated construction by which the sliding jaw may be adjustably fixed at various distances from the fixed jaw.

Other objects and advantages of the invention will be fully understood from the following description and claim, when taken in connection with the annexed drawings, in which—

Figure 1 is a side elevation, partly in section, of my improved wrench. Fig. 2 is a plan view. Fig. 3 is a transverse section taken on line *yy* of Fig. 1. Fig. 4 is a similar view taken on line *xx* of Fig. 1. Fig. 5 is a detail perspective view of the arm for engaging the shank of the fixed jaw to adjustably fix the sliding jaw; and Fig. 6 is a detail perspective view, on an enlarged scale, of the dog carried by the sliding jaw.

Referring by letter to said drawings, A indicates the fixed jaw of my improved wrench, which has a shank *a*, provided on one of its sides with a plurality of transverse teeth *b'*, and B indicates the sliding jaw, which is arranged on the shank of the fixed jaw, as shown. This sliding jaw is provided on its rear side with two apertured lugs *c*, and between these lugs is arranged the forward end of the arm C, which is pivotally connected to said lugs by a transverse pin *d*, as shown. The said arm C has its forward end bifurcated, as indicated by *e*, and in this bifurcation is arranged the coiled spring *f*, which surrounds the pin *d* and has one of its ends arranged against the rear side of the sliding jaw B and its opposite end arranged against the outer side of the arm C, so as to press the free end of said arm toward the shank *a*. At its free

end the said arm C is provided with an enlargement *g*, which is toothed on its innerside, as indicated by *h*, to engage the teeth *b* of the shank *a*, and it is also provided with the lateral branches *t*, whereby it may be readily grasped and swung away from the shank *a* to permit of the jaw B being adjusted with respect to the jaw A.

The teeth *b* of the shank *a* and the teeth *h* of the arm C are beveled in one direction, as clearly shown in Fig. 1, to permit of the sliding jaw being adjusted toward the fixed jaw without the necessity of moving the arm C away from the shank *a*.

By reason of the construction thus far described it will be observed that when it is desired to turn an article with the wrench it is simply necessary for the operator to place the jaws A B on opposite sides of such article and press the jaw B tightly against the same, when the article may be turned without danger of the jaw B being released. When it is desired to remove the wrench from an article, it is simply necessary for the operator to move the free end of arm C away from the shank *a*, when the sliding jaw may be readily moved away from the article and the fixed jaw. When the arm C is released, it will, by virtue of the spring *f*, automatically resume its position against the shank *a*, ready to engage the teeth thereof and hold the jaw B against movement away from the jaw A.

As better shown in Fig. 1, the sliding jaw B is provided in its forward side with a recess *i*. This recess *i* has its inner wall *j* inclined downwardly and away from the fixed jaw A, and it is designed to receive the movable dog E, which has a longitudinal, transversely-disposed slot *k* and is held in the recess *i* by a transverse bolt taking through the jaw B and said slot *k*, as shown. The dog E is normally pressed outward by the coiled spring *l*, and it has its outer side toothed or serrated, as indicated by *m*, and also has its inner transverse side beveled or inclined, as indicated by *n*. By virtue of this it will be observed that when the jaws are in engagement with an article to be turned, and the wrench is turned in the direction of the arrow, (see Fig. 1,) the dog E will tend to move upwardly or toward the shank *a*, and will consequently be more



tightly forced against the article being turned, so as to prevent the wrench from slipping on the same.

It will be observed from the foregoing that, while exceedingly cheap and simple, my improved wrench is very strong and durable, is capable of being readily adjusted to suit articles of various sizes, and is not likely to slip when properly tightened on an article to be turned.

Having described my invention, what I claim is—

In a sliding jaw wrench, the combination of a fixed jaw having a shank provided on one of its sides with a series of transverse teeth, a sliding jaw arranged on said shank and having apertured lugs on its rear side, the arm

having one of its ends bifurcated and also having teeth on its inner side at its opposite end to engage the teeth of the shank, the bolt taking through and pivotally connecting the said arm to the lugs of the sliding jaw, and a coiled spring surrounding the bolt and arranged within the bifurcation of the arm and having one of its ends bearing against the sliding jaw and its opposite end bearing against the outer side of the arm, substantially as specified.

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

CHRISTIAN BLACK.

Witnesses:

THOS. ROBERTS,  
GEO. N. BARDIN.