

No. 741,841.

PATENTED OCT. 20, 1903.

H. SCHEFFER.  
WRENCH.

APPLICATION FILED JAN. 12, 1903.

NO MODEL.

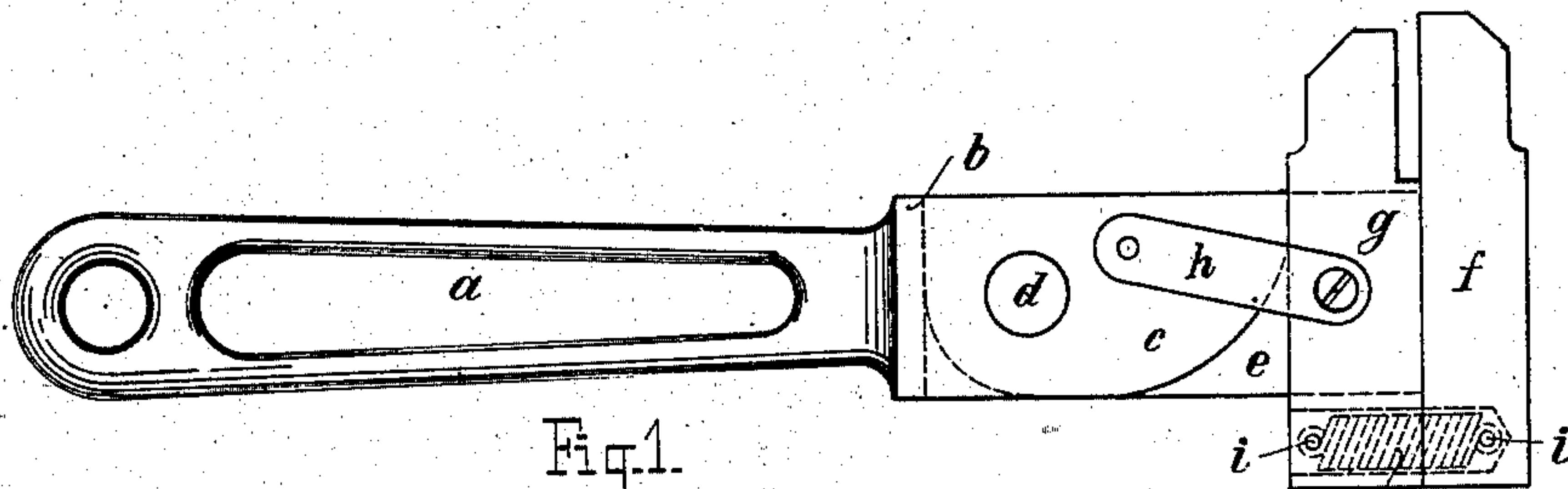


Fig. 1.

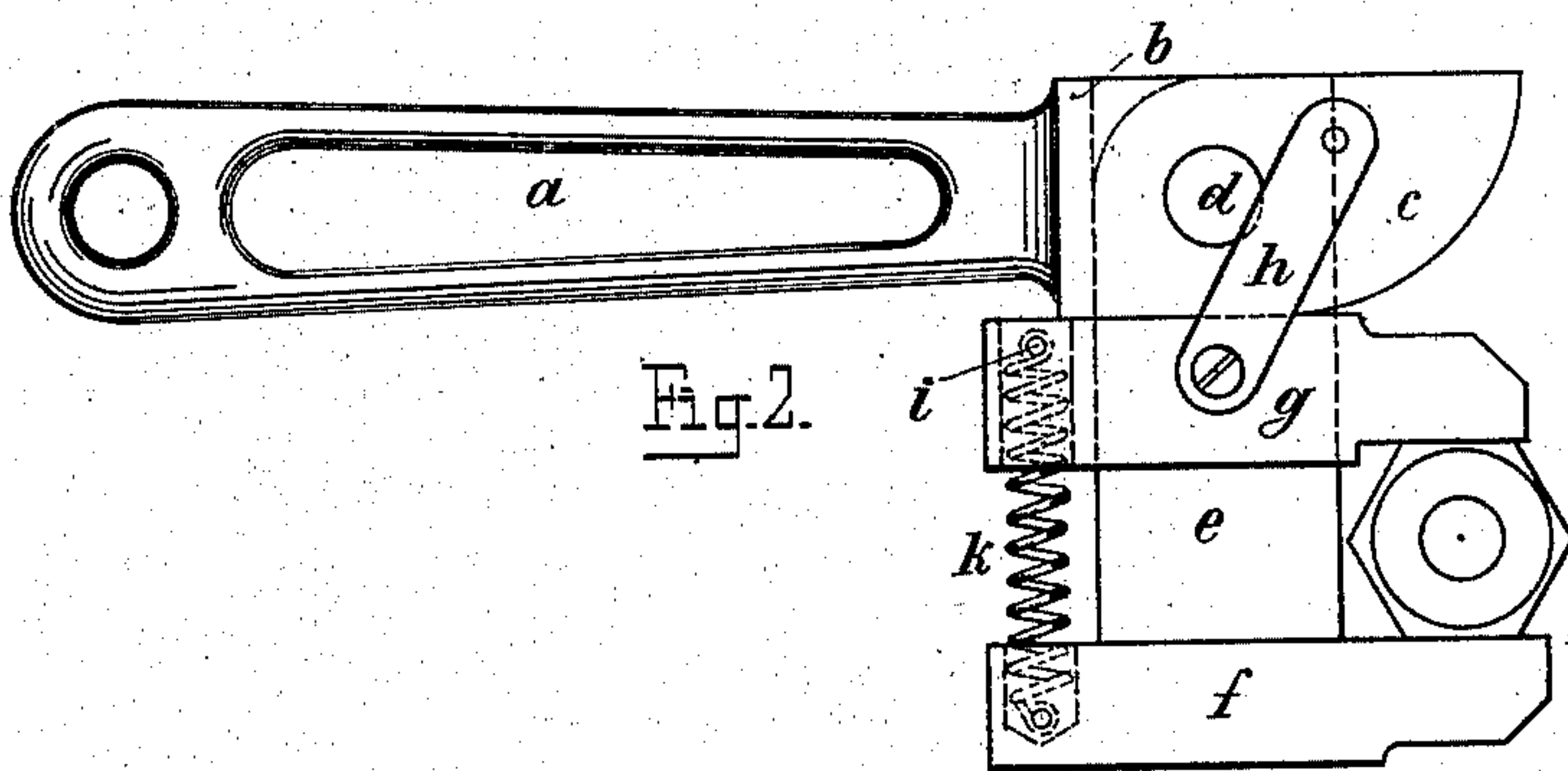


Fig. 2.

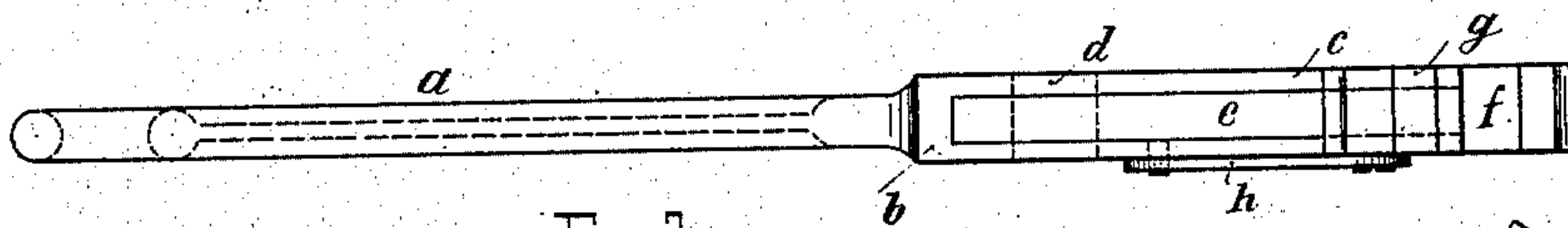


Fig. 3.

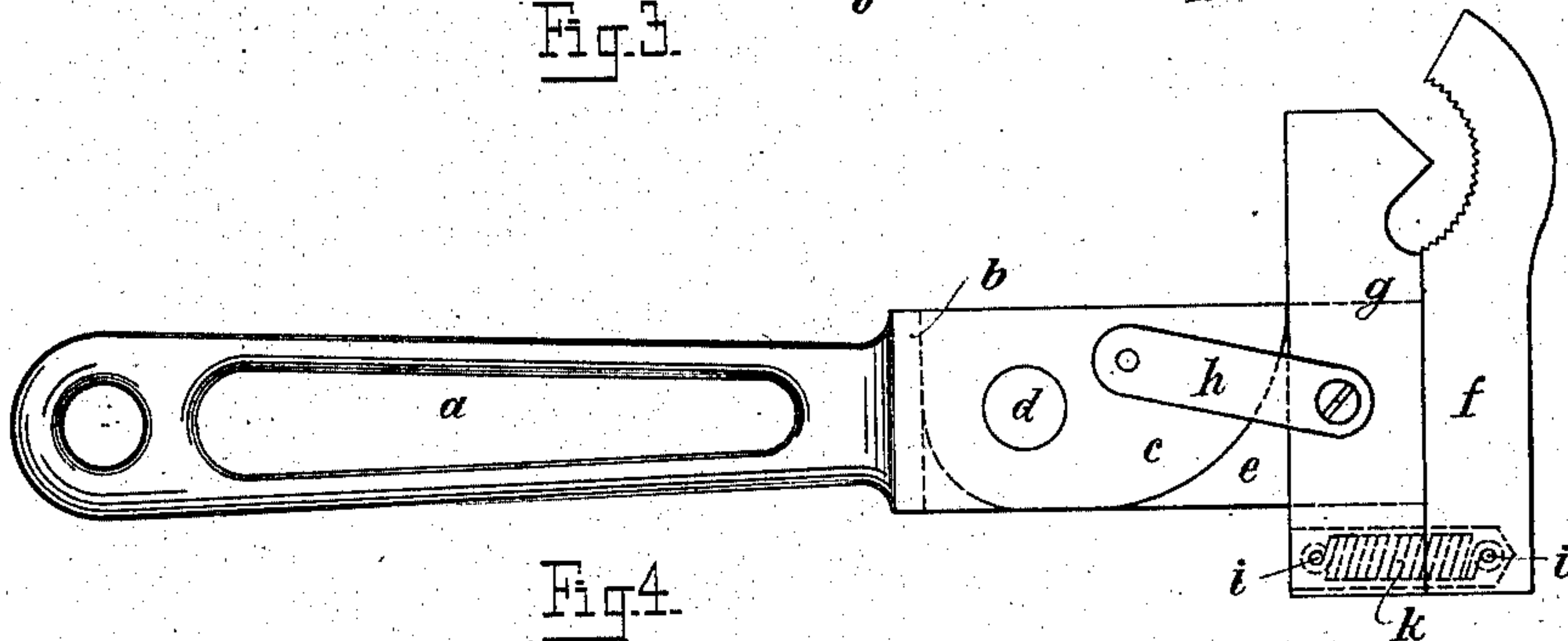


Fig. 4.

Witnesses:  
*Hans Möhlig*  
*Josef Rippen*

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*Harry Scheffer*  
per *Josef Möhlig*  
Attorney.



## UNITED STATES PATENT OFFICE.

HARRY SCHEFFER, OF AIX-LA-CHAPELLE, GERMANY.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 741,841, dated October 20, 1903.

Application filed January 12, 1903. Serial No. 138,781. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY SCHEFFER, a citizen of the German Empire, residing at Aix-la-Chapelle, Rhenish Prussia, Germany, have invented an Improved Wrench, of which the following is a specification.

My present invention relates to an improved wrench in which a pivoted handle provided with a bifurcated eccentric quadrant head operates in conjunction with a shank to which is secured the stationary jaw and upon which is arranged the sliding jaw, the said jaws being connected one to the other by means of a spring and the movable sliding jaw being connected to the eccentric handle-head by means of a link pivoted to the said jaw as well as to the said head; and the objects of my improvement are, first, to provide means for automatically catching before pressing the proper faces of a nut or the like by means of the jaws when the wrench is opened; second, to provide jaws that are operated in order to act upon a nut or the like by means of an eccentric quadrant-shaped bifurcated handle-head, and, finally, to provide means in such wrenches for mechanically opening the wrench-mouth. I attain these objects by means of the wrench illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the wrench in its closed position. Fig. 2 is the same view, but the wrench is opened. Fig. 3 is a front view of the wrench in its closed position. Fig. 4 is a view of the same wrench serving as a pipe-wrench.

Similar letters refer to similar parts throughout the several views.

Hitherto wrenches are well known and described in the United States Letters Patent No. 637,921, in which a shank, to which is secured the stationary jaw and upon which slides the movable jaw, is eccentrically pivoted in a circular head of the handle, while the movable jaw is provided with a lug that has a downwardly-projecting pin to be guided in a circular groove of the handle-head; but in such wrenches the opening and shutting of the wrench-mouth are entirely due to the eccentric pivoting of the shank and to the pin of the lug engaging the circular groove of the head. The jaws being not at all able to automatically catch the proper faces of a nut

or the like when the wrench is opened are pressed in such wrenches not at all toward opposite faces of a nut; but they will nearly always seize the vertical edges of the nut and injure them when being pressed.

Now by means of my improved wrench I can automatically seize opposite faces of a nut by the jaws before pressure due to the eccentric shape of the handle-head is acting upon the movable jaw in order to turn the nut. When turning back the handle of my improved wrench—that is, when giving way to the movable jaw—I can retract the wrench and cause the spring-acted jaws to seize the following opposite faces of a nut, whereafter by moving again the eccentric handle into the proper position I can screw anew the nut without having been obliged to take away the wrench from the nut and to put it anew onto the same. Further, by means of my improved wrench I can mechanically open the wrench-mouth by turning the jaws about ninety degrees around a quarter-circle, the movable jaw being connected to the eccentric head of the handle by means of a link articulated to the jaw as well as to the head.

The handle of my improved wrench is a lever *a*, the front end *b* of which is a bifurcated head at *c* and furnished with a pivot *d*. The round edges of the members of this bifurcated head are eccentrically shaped in respect to the fulcrum of the pivot *d*. On the said pivot *d* there is mounted the shank *e*, furnished at its extremity with the stationary jaw *f*. The movable jaw *g* is loosely arranged so as to slide on the said shank *e*. This jaw is connected to the head *b* of the handle *a* by means of a link *h*, articulated to the jaw itself and pivoted to the handle-head *b*. The rear parts of the jaws *f* and *g* are hollow or provided with recesses, in which are fastened pins *i*, to which pins are secured the ends of a spiral spring *k*, thus connecting the jaws one to the other.

The manner of operating the described wrench is as follows: In order to seize a nut or the like, I move the shank *e* from the position shown in Fig. 1 into the position shown in Fig. 2. For that purpose I need not at all take the shank by hand; but I put the foremost end of the longer stationary jaw on a face of the nut and move the handle. The



stationary jaw, and therewith the shank *e*, being retracted by the nut, the shank will be moved around the pivot *d*. While thus moving the sliding jaw *g* is retained by means of the link *h* near the bifurcated head *c*, and the stationary jaw is separated from that head, in consequence whereof the wrench-mouth will be opened. Now when I let loose a little the handle *a*, so that no pressure at all is executed by the eccentric head *c*, the jaws *f* and *g* are attracted, by means of the spring *k*, one to the other, and they will strictly and exactly seize two opposite faces of the nut, because the inner faces of the jaws are plane and parallel one to the other. This seizing is due entirely to the spring *k* without having executed any pressure by the eccentric head. When pressing now the handle *a*, operating it like a bent lever, the round eccentric edges of its head *c* will act upon the under face of the sliding jaw *g*. With an increasing pressure the greater is the pressure executed on the lever *a*.

I am well aware that prior to my invention wrenches have been constructed and are well

known in which an eccentric head of the handle is acting upon a sliding jaw. Therefore I do not claim such wrenches broadly; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

As a new article of manufacture, in a wrench, the combination with a handle having a quadrangular bifurcated head and having an arc or cam shaped end, a shank eccentrically pivoted in the said head, a stationary jaw secured to the end of the said shank, a sliding jaw on said shank, a link connecting the said sliding jaw to the said bifurcated eccentric head, the jaws being provided with recesses, pins secured in the said recesses, a spiral spring secured to the said pins and connecting the jaws one to the other, all essentially as described and for the purpose specified.

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

HARRY SCHEFFER.

Witnesses:

JOHN B. ADAMS,  
HENRY RUSIDFLIEG.