

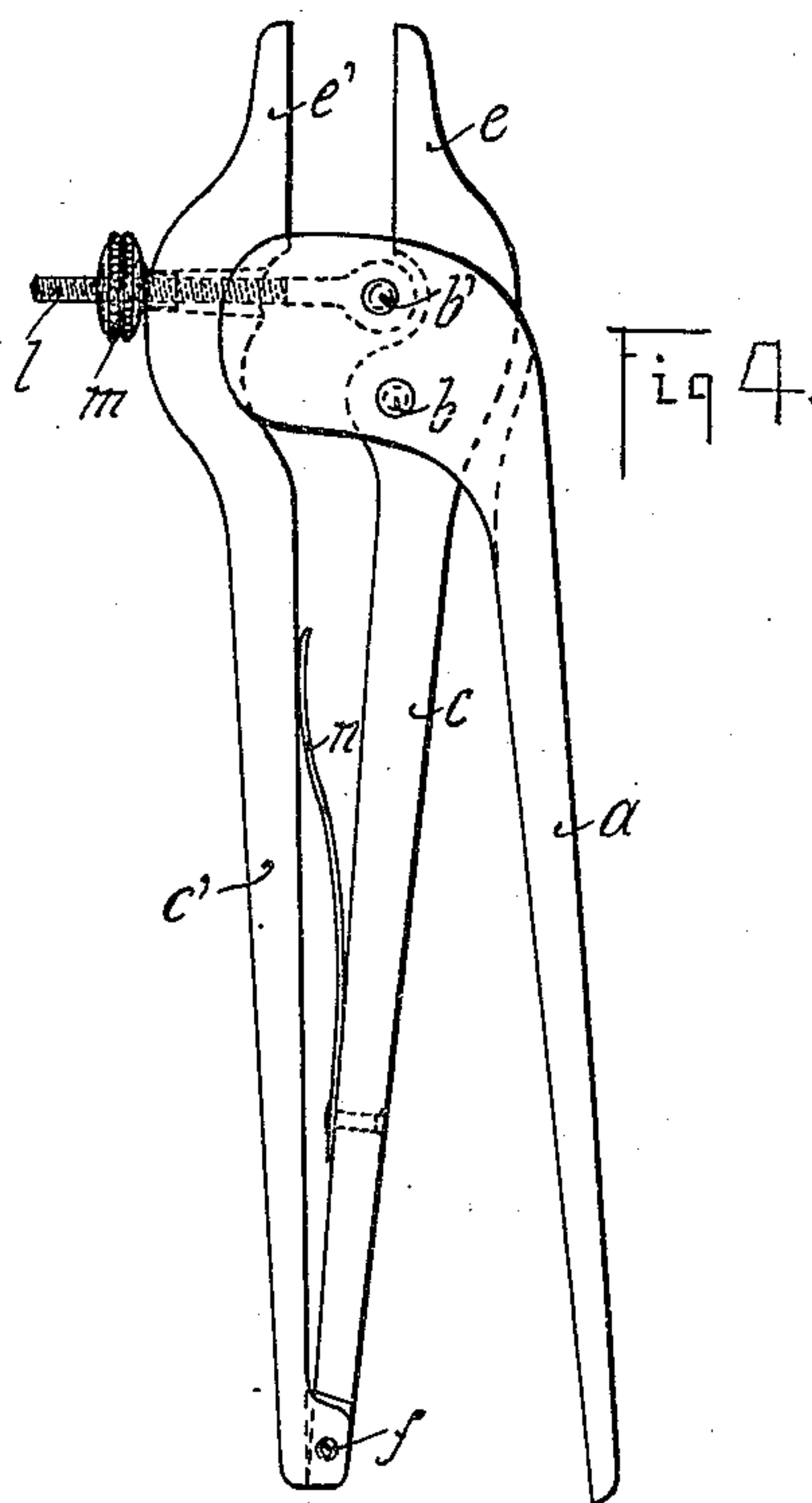
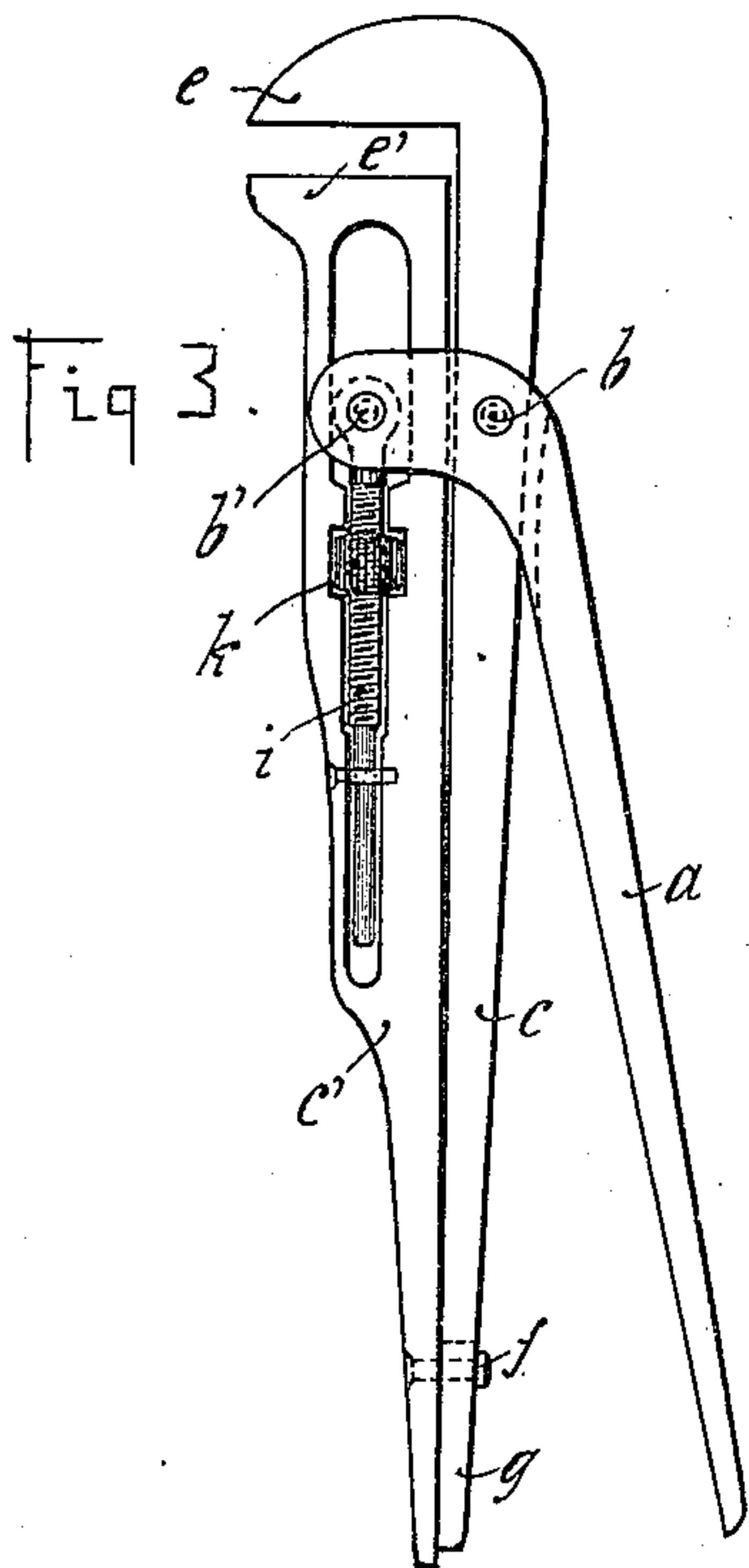
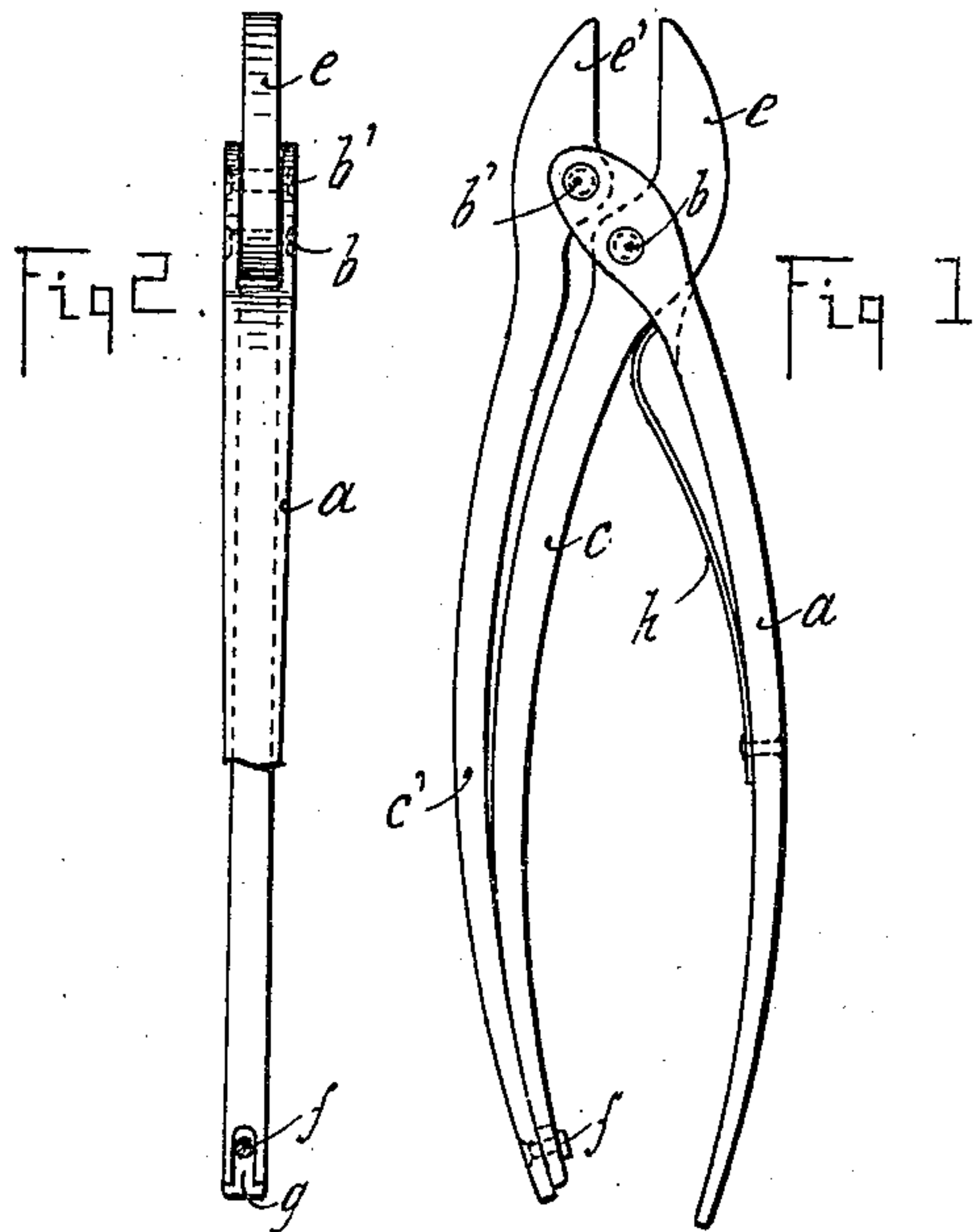
No. 639,812.

Patented Dec. 26, 1899.

T. JENSEN.
MONKEY WRENCH.

(Application filed Apr. 4, 1898.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

THOMAS JENSEN, OF ARENDAL, NORWAY.

MONKEY-WRENCH.

SPECIFICATION forming part of Letters Patent No. 639,812, dated December 26, 1899.

Application filed April 4, 1898. Serial No. 676,383. (No model.)

To all whom it may concern:

Be it known that I, THOMAS JENSEN, a subject of the King of Sweden and Norway, residing at Arendal, Norway, have invented certain new and useful Improvements in Monkey-Wrenches, Tongs, or Similar Tools, of which the following is a specification.

This invention relates to improvements in monkey-wrenches, tongs, and similar tools whereby their construction is simplified and their power considerably increased, while the tools can be handled just as easily, if not more easily, than tongs or monkey-wrenches as hitherto constructed.

In the accompanying drawings, Figure 1 is an elevation of a monkey-wrench. Fig. 2 is a side view of the same. Fig. 3 is an elevation of a modified form of monkey-wrench. Fig. 4 is an elevation of a pair of tongs.

The arrangement for multiplying power which is characteristic of this invention is substantially the same in all three of the tools named and consists, in the first place, of a lever *a*, which is bent more or less to an angle or curve. This lever has one of its ends furnished with two pins *b b'*, or these pins may be formed by the lever itself and are placed a certain distance apart, each being connected pivotwise with its respective limb of the tool. For example, the pin *b* forms the pivot for the lever *a* on the limb *c*, while the pin *b'* forms the pivot for the lever *a* on the other limb *c'*.

e e' are the jaws of the tool, that form the outer ends of the limbs *c c'*, which are connected pivotwise at their other end by a bolt *f*, so as to give the jaws a closing movement. By moving the lever *a* alternately forward and backward while the limbs of the tool are held in the hand or one of the limbs is suitably secured the jaws will be caused to close, and according to the rule respecting a power and its leverage it will be understood that an exceedingly powerful effect can be exercised by the jaws *e e'* by applying a comparatively small force to the outer end of the lever *a*. Of course the longer this lever *a* is the greater is the multiplication of the power.

In the monkey-wrench shown in Figs. 1 and

2 the jaws *e e'* form flat surfaces, and in order to cause the jaws to grip the nut with their flat surfaces parallel to each other one limb *c* is allowed to slide along the other limb *c'*, as the pin *f* on the limb *c'* works in a slot *g* in the other limb *c*. The lever *a* may be provided with a spring *h*, working against the limb *c*. Otherwise the arrangement is similar to that in Fig. 1.

Fig. 3 illustrates a modification of the wrench shown in Figs. 1 and 2, in which the jaws *e e'* are at an angle to the limbs and have only a sliding movement produced by the movement of the lever *a*, the pin *f* on the limb *c'* working in a long slot *g* in the limb *c*. To allow for adjustment, the pin *b'* is not fastened direct to the limb *c'*, but to a screw-threaded spindle *i*, which is located in a slot or aperture in the limb *c'* and is provided with a nut *k*, working against the edges of an enlargement of the slot or aperture in the limb *c'*. By turning this nut the spindle *i* can be screwed up or down, producing a movement of the limb *c'*, as will be readily seen without further explanation.

In Fig. 4 the arrangement for multiplying power is shown applied to a pair of tongs. The pin *b'* is not fastened direct to the limb *c'*, but to a threaded spindle *l*, which passes through the limb *c'* and is on the outer end provided with a nut *m* for adjustment of the jaws *e e'*. The limbs are connected pivotwise at *f* and are kept apart by the spring *n*.

As the arrangements shown in the different figures are only different ways of carrying out the same invention, it will be obvious that my invention can be applied to numerous other tools, such as pipe-tongs, nippers, pincers, hand-vises, and the like.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination, the two limbs connected together adjustably at one end and having jaws at the other end, and a lever pivotally connected with the limbs, substantially as described.

2. In combination, the two limbs connected

together at one end and having jaws at their
opposite ends, and a lever having a pivotal
connection with each of the limbs, one of said
connections being adjustable, substantially
5 as described.

3. In combination, the two limbs connected
together at one end and having jaws at their
opposite ends, the lever having a pivotal con-
nection with each of the limbs one of said piv-

otal connections being adjustable by a bolt ro
and screw, substantially as described.

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

THOMAS JENSEN.

Witnesses:

AXEL GOTTFRIED GRÖNN LAHN,
HALFDAN SOMMERFELDT.