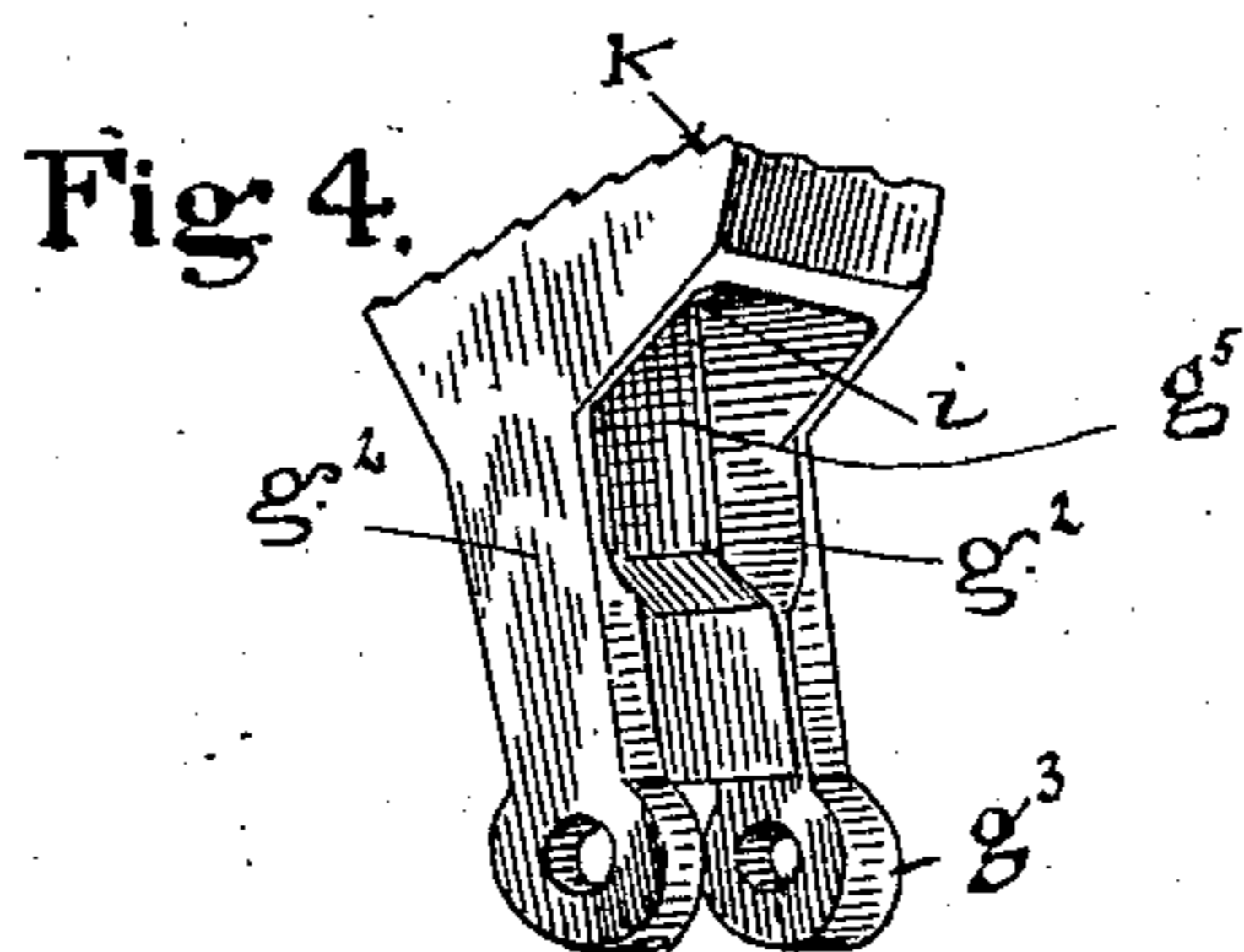
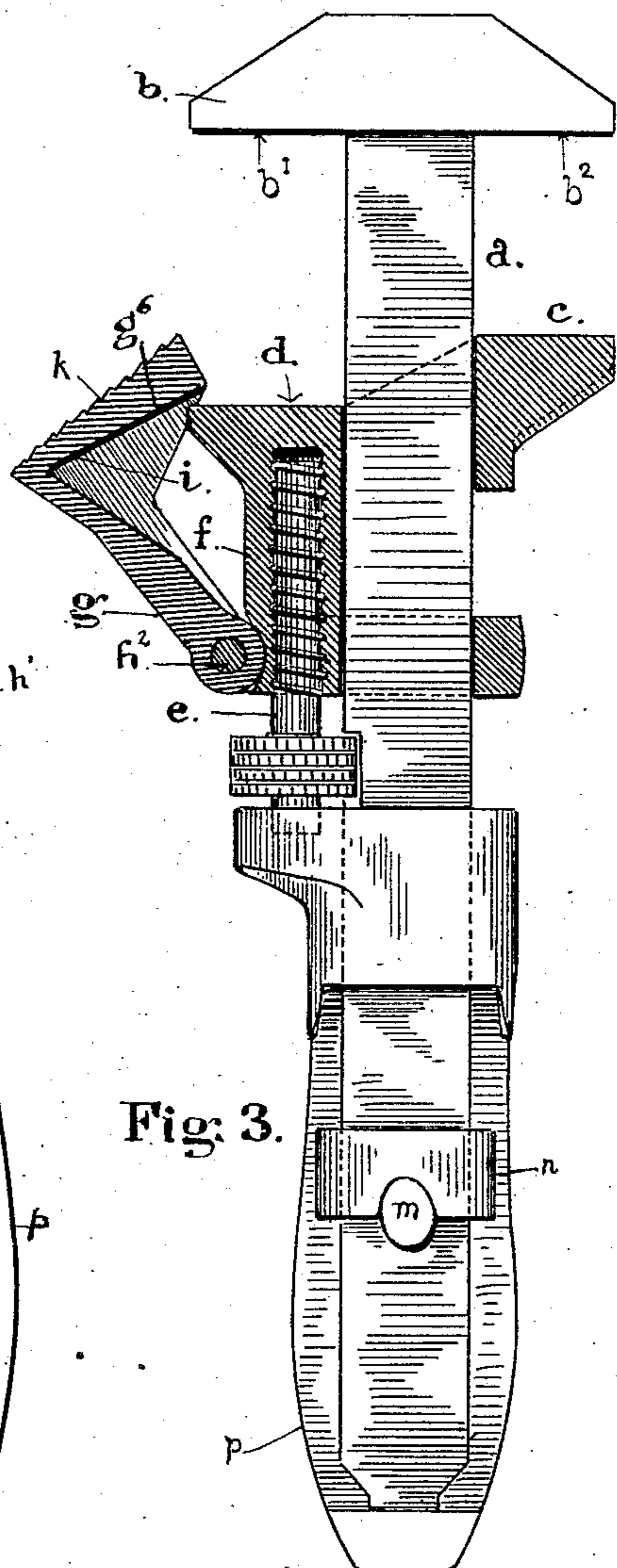
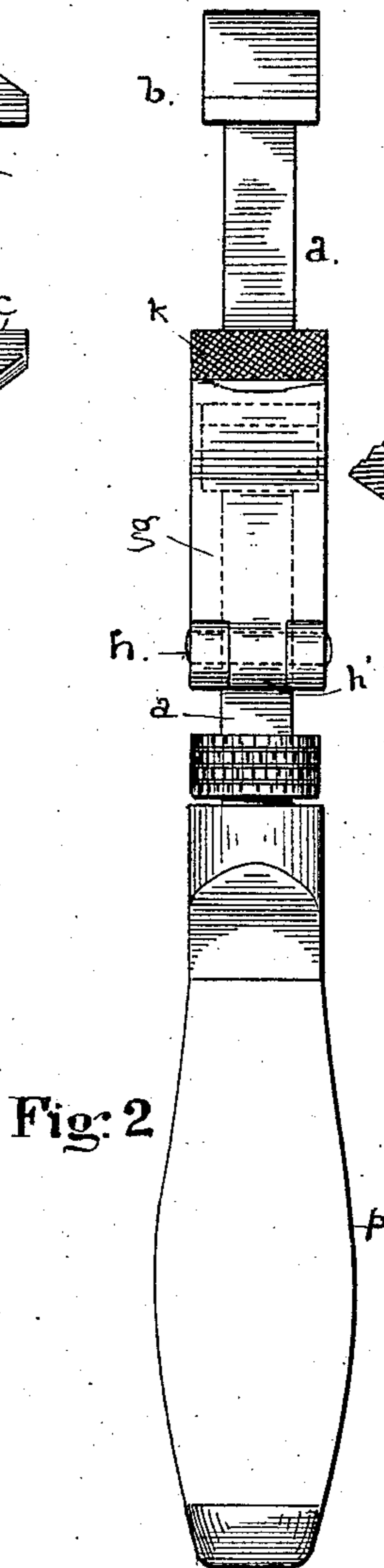
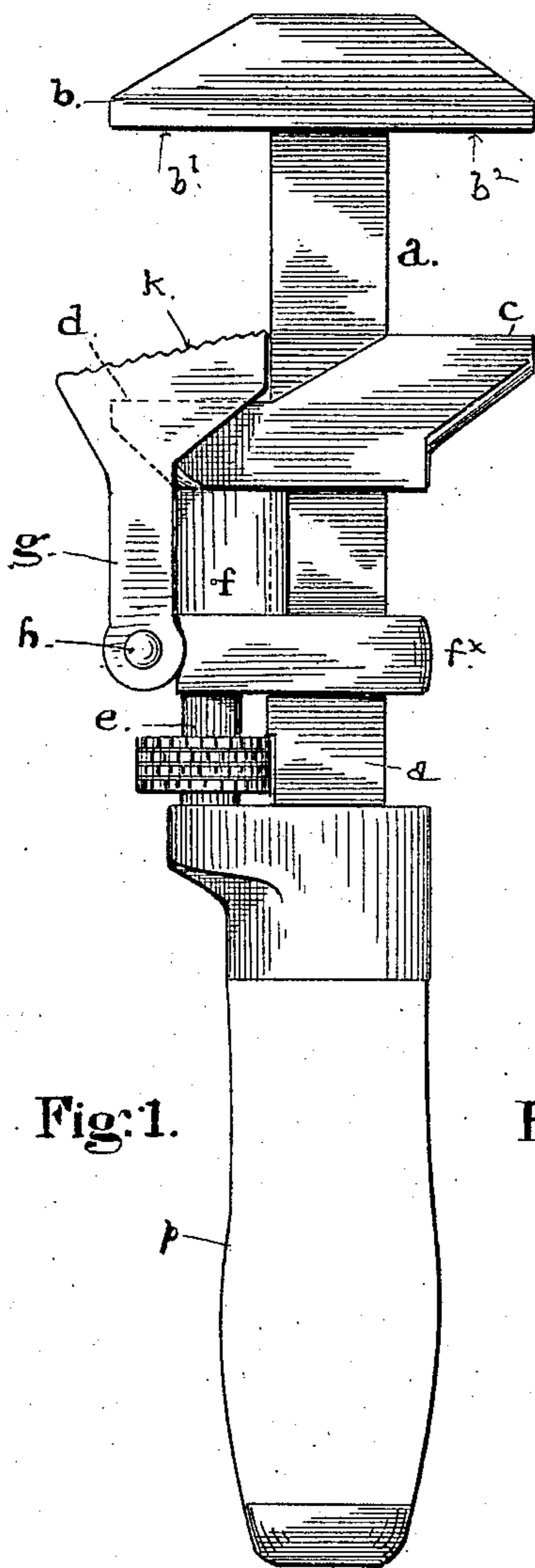


No. 849,765.

PATENTED APR. 9, 1907.

G. E. WOODBURY.
ADJUSTABLE WRENCH.
APPLICATION FILED JAN. 23, 1907.



Witnesses
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GEORGE E. WOODBURY, OF SAN FRANCISCO, CALIFORNIA.

ADJUSTABLE WRENCH.

No. 849,765.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed January 23, 1907. Serial No. 353,719.

To all whom it may concern:

Be it known that I, GEORGE E. WOODBURY, a citizen of the United States, and a resident of San Francisco, county of San Francisco, and State of California, have invented new and useful Improvements in Adjustable Wrenches, of which the following is a specification.

This invention relates to an improvement in adjustable wrenches for setting up nuts and pipe-couplings; and it has for its object primarily to provide a wrench for the special work of setting nuts of two standard sizes by a single adjustment when the nuts bear to each other a certain relation in diameter. By adjustment also it is rendered capable of use for setting up pipe-couplings and for turning other cylindrical work.

An adjustable wrench of my invention consists of the construction and combination of parts hereinafter described, and pointed out in the claim at the end of this specification.

The accompanying drawings illustrate an adjustable wrench of my invention.

Figure 1 is a side view of the complete wrench, showing the movable jaws adjusted for setting both a nut and a pipe-coupling. Fig. 2 is a view taken from the left of Fig. 1. Fig. 3 is a side view principally in longitudinal section. Fig. 4 is a detail in perspective of the swinging jaw which is combined with the movable jaw to adapt the wrench for use on pipe-couplings and other cylindrical work.

The shank is a single flat bar *a*, extending through the frame or metal part *p* of the handle in which it is fixed by a cross-piece *n* and a stud *m*, passing the shank and under the cross-piece. The handle is completed and made of proper shape for a grip by covering the bar and the skeleton frame with wood or other suitable material, as seen in Figs. 1 and 2.

The head *b* extends laterally across the end of the shank, forming two fixed jaws *b'* *b''* on opposite sides at right angles to the shank. A piece *f*, fitted to slide on the shank and adjustable in the well-known manner by means of a screw-shaft *e*, is formed or provided with a jaw *d* on one side of the shank *a* in line with the fixed jaw *b'* and a similar jaw *c* on the opposite side in line with the other fixed jaw *b''*.

By the one adjustment of the movable piece both jaws *d* *c* will be set in working re-

lation to the fixed jaws on the shank at the required distance to take the nut or piece to be turned; but instead of being situated in the same plane with the opposite jaw on the slide *f* the jaw *c* is set on a different plane, whereby the distance between its face *c* and the fixed jaw *b''* in every adjustment of the wrench to the work will be less than between the opposite jaws, and the opening on one side of the shank will always bear a certain proportion to the opening on the opposite side—as, for example, the opening on the right side of the wrench (illustrated in Fig. 1) is set to take a nut of one inch in diameter, the opening on the opposite side will be set to take an inch-and-a-quarter nut, and in every adjustment of the sliding piece the openings between the two sets of jaws will be in the same proportion.

A wrench of this construction is especially adapted for use on machinery or apparatus where the nuts or parts to be tightened are mostly of two different sizes or where one series of nuts have a certain relation in size to a number of others in the machine and where parts have frequently to be loosened or tightened during the operation of the machine.

An adjustable wrench of this invention will save time and greatly facilitate the work of the operators by reason of the double adjustment of the wrench for taking two sizes of nuts by the same movement of the adjustment-screw.

This wrench is also adapted for use on a pipe-coupling and similar cylindrical pieces, thereby enlarging its scope by attaching a swinging jaw *g* to the piece *f* by a hinge-joint *h*. This piece *g* is shaped as illustrated in Fig. 4. It is composed of a plate having a serrated face *k* and side pieces *g''*, terminating in knuckles *g'''* and united by a cross-piece above the knuckles. A space or recess *g⁵* beneath the serrated top face is properly formed to receive the lower jaw *d*, and the piece *g* is attached to the adjustable piece *f* by a knuckle *h'* on the piece *f* and a pin *h''* inserted through the three knuckles *h'* *g'''* *g'''*. The hinge-joint is situated at proper distance from the top face of the jaw *d* to let the movable piece *g* swing into and out of position, and the bottom face *g⁶* of the serrated jaw is arranged to have a solid bearing on the top face of the jaw *d* when the piece *g* is set in position for use.

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

5 The herein-described wrench, comprising the straight shank having a double head forming the fixed jaws on opposite sides of the shank, the slide-piece adjustable on the shank and provided with oppositely-set jaws adapted by their position to coact with the
10 fixed jaws and situated in different planes with respect to each other, so as to produce in every adjustment of the slide-piece an opening between the fixed and the movable

jaw on one side of the shank of relatively greater dimensions than the opening between 15 the corresponding jaws on the opposite side, and a swinging jaw on the slide-piece provided with a serrated face and pivotally attached to the slide-piece on one side of its shank and removably fitted to cover the 20 movable jaw on that side.

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Witnesses:

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