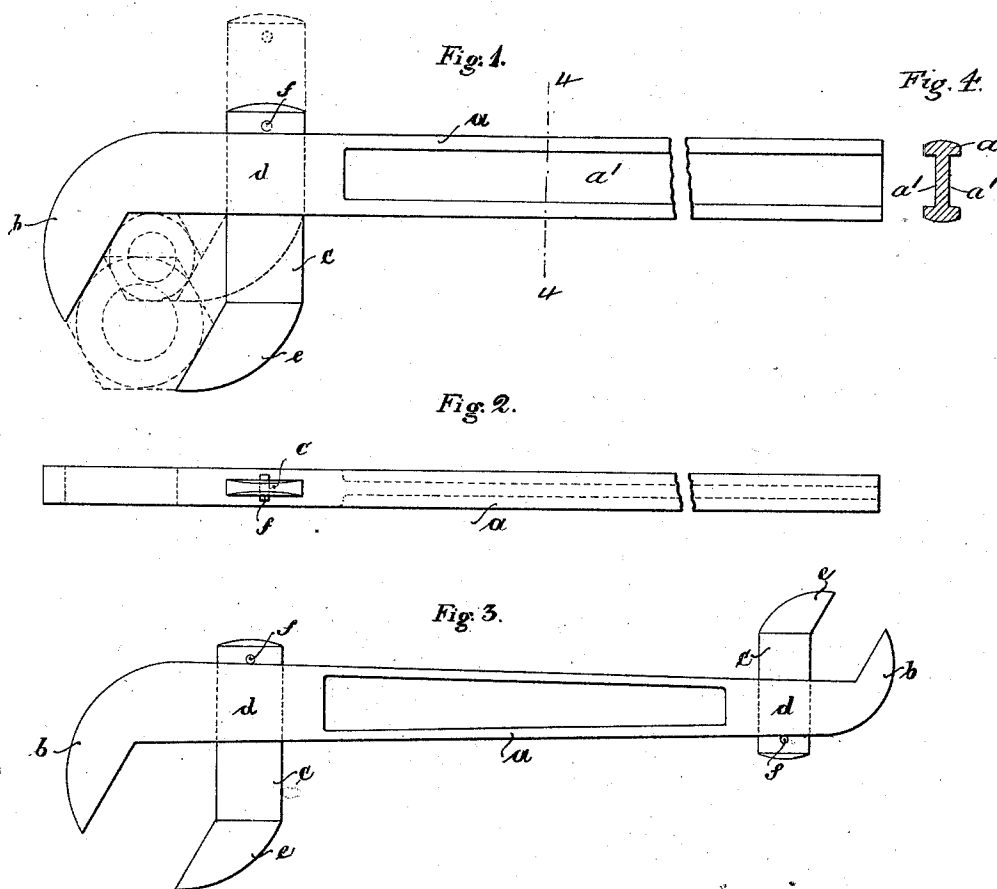


(No Model.)

C. BECHER.
WRENCH.

No. 541,827.

Patented July 2, 1895.



Witnesses.

A. J. Hadden

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UNITED STATES PATENT OFFICE.

CARL BECHER, OF HAGEN, GERMANY.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 541,827, dated July 2, 1895.

Application filed January 9, 1895. Serial No. 534,379. (No model.) Patented in Austria November 2, 1894, No. 3,942, and in England November 5, 1894, No. 21,231.

To all whom it may concern:

Be it known that I, CARL BECHER, a subject of the King of Prussia, German Emperor, and a resident of Hagen, in the Province of Westphalia, Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Wrenches, (for which I have obtained patents in Austria, No. 3,942, dated November 2, 1894, and in England, No. 21,231, dated November 5, 1894,) of which the following is a specification.

The improved wrench, key, or spanner is shown in the annexed drawings, in which—

Figure 1 is a side elevation showing a single wrench and indicating in dotted lines the extent of its adjustment. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a side elevation of a double wrench, namely one with similar devices, though on different scales, at each end of its handle. Fig. 4 is a cross-section on line 4 4, Fig. 1.

The wrench comprises the handle *a* terminating in a fixed jaw *b* the angle of the face of which to the side of the handle is preferably one hundred and twenty degrees. Through the body of the handle *a*, preferably at a distance from the jaw *b* equal to twice the length of one of the side faces of the smallest six sided nut intended to be fitted by the wrench, is a transverse passage *d* in which slides the bar *c* carrying at its end the jaw *e* the face of which is parallel to that of the jaw *b*. The passage *d* is of exactly the size to receive the bar *c* so that the latter can slide in the passage *d* only in the direction of the length of the bar *c* and not laterally therein nor in the direction of the length of the handle *a*. The direction of the passage *d* is such that if its axis is produced to meet the produced axis of face of jaw *b* the angle included will be an acute angle, the preferential angle being thirty de-

grees. The pin *f* prevents the bar *c* from falling out of the passage *d*.

To lighten the weight the handle *a* is made with lateral recesses *a'* as shown in cross section in Fig. 4.

In operation the wrench is adjusted to the size of the nut or the like, on which it is to be fitted, by moving the bar *c* longitudinally in its socket or passage *d* until the faces of the jaws *b* and *e* are slightly farther apart than any two opposite faces of the nut. The wrench is then placed on the nut and operated in the usual way since the lateral strain brought onto the bar *c* will be sufficient to hold it frictionally in place in the passage *d*.

I claim as my invention—

1. The combination of a handle *a* having a projecting fixed jaw *b* and a transverse passage way *d* whose axis is in a plane at an acute angle to the plane of the face of jaw *b*, with a bar *c* having a cross section adapted to fill said passage way and adapted to slide therein in direction of the longitudinal axis of said bar only, and a jaw *e* on said bar *c* parallel to jaw *b* substantially as set forth.

2. The combination of a handle *a* having a projecting fixed jaw *b* at an angle of one hundred and twenty degrees to the side face of said handle and having a passage way *d* through said handle at right angles to the side face thereof, with a bar *c* adapted to slide in said passage way and a jaw *e* on said bar *c* having its face parallel to that of jaw *b* substantially as and for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CARL BECHER.

Witnesses:

LOUIS KRUSE,
CARL FRIED. BORGGRÄFE.