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WRENCH.  
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905,116.

Patented Nov. 24, 1908.

Fig. 1

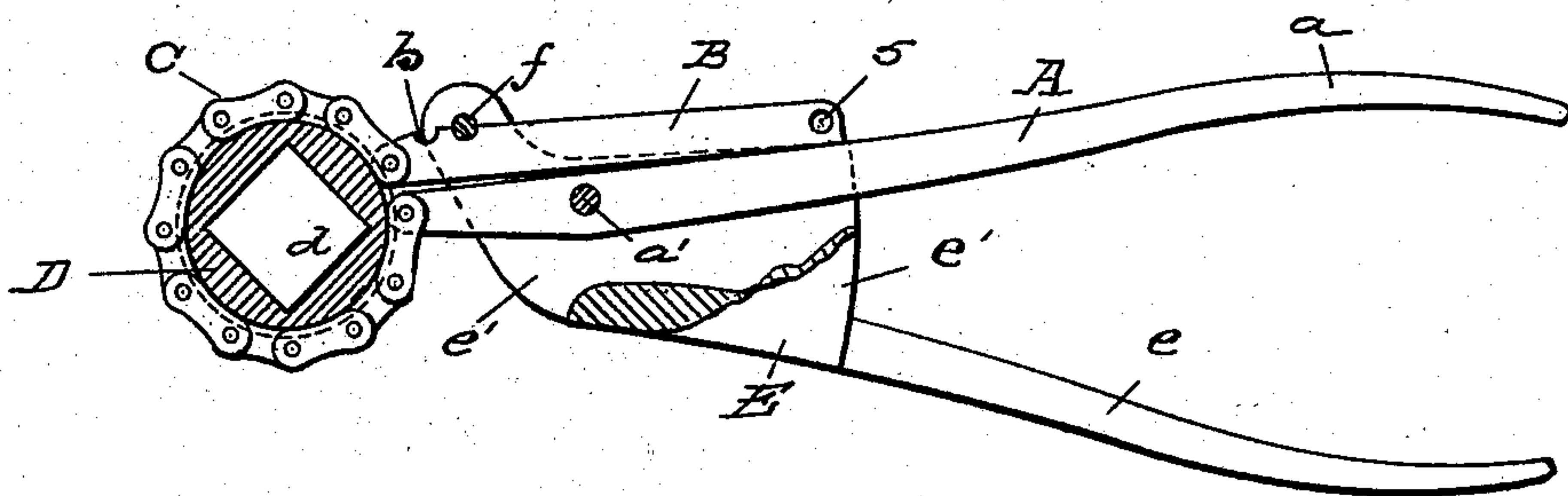


Fig. 2

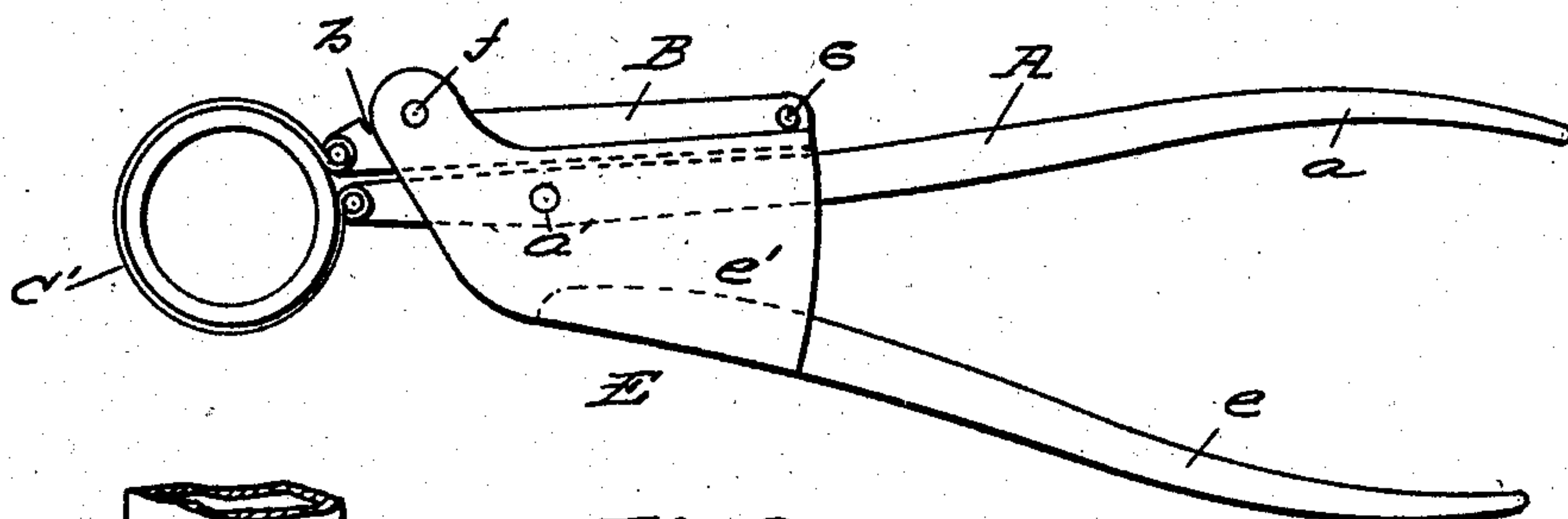
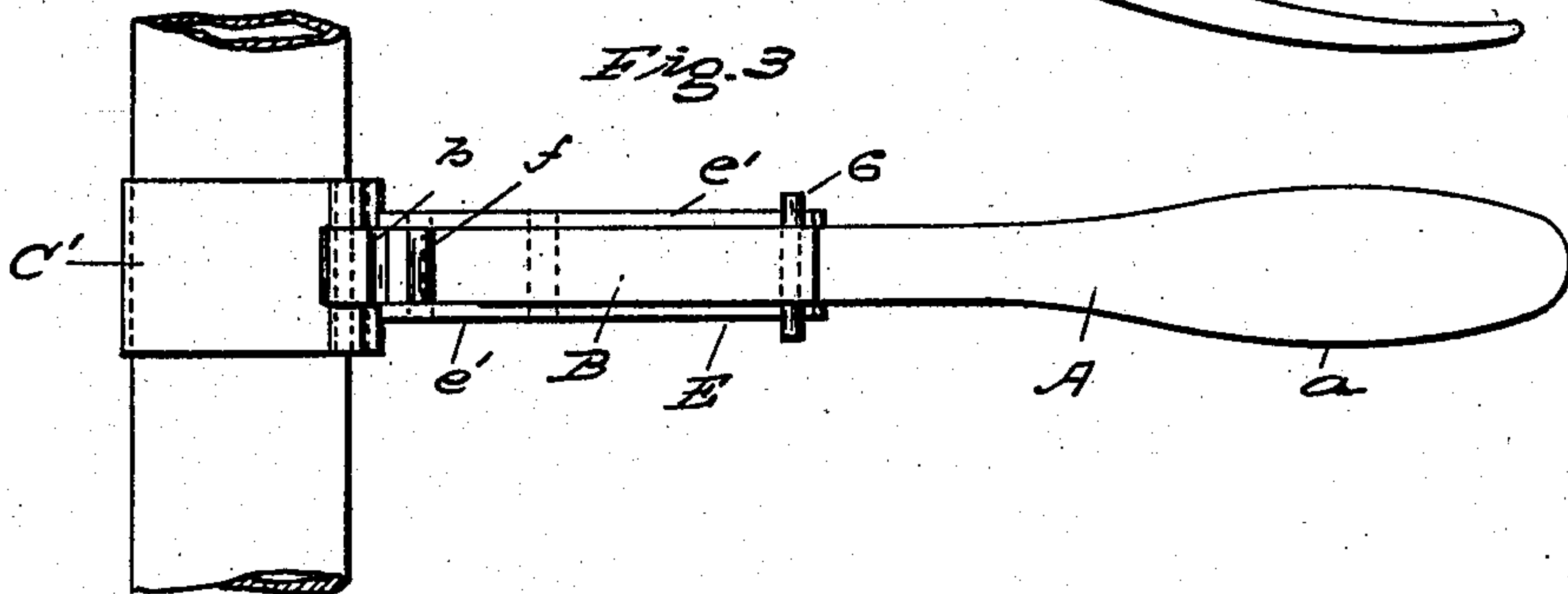


Fig. 3



WITNESSES  
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# UNITED STATES PATENT OFFICE.

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## WRENCH.

No. 905,116.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed September 22, 1908. Serial No. 454,142.

*To all whom it may concern:*

Be it known that I, JOSEPH G. SWALLOW, a citizen of the United States of America, and residing in the city, county, and State of New York, have invented a certain new and useful Improved Wrench, of which the following is a specification.

The main object of my invention is to construct a wrench which will provide a gripping power greater than that of wrenches as usually constructed and one which can be used either as a nut wrench or a pipe wrench.

In the accompanying drawing Figure 1 is a side view, partly in section, of one form of my improved wrench; Fig. 2 is a side view of a modification; and Fig. 3 is a plan view of a modification.

My invention is of that type in which a band in the form of a chain or a flexible strip is connected to handles pivoted to provide a leverage to bind the chain or band around the disk or pipe to be gripped.

In Fig. 1 I have shown the band as in the form of a chain C connected at one end to a lever A, and at the other end to a lever B, and embracing the grooved circumference of a disk D provided with any form of aperture *d* suitable to fit over a nut to which the wrench is to be applied. The lever A, which is extended into, or has a handle *a*, is pivoted at *a*<sup>1</sup> to a lever E, consisting of a pair of side plates *e*<sup>1</sup>, *e*<sup>1</sup> and a handle *e*. The side plates *e*<sup>1</sup>, *e*<sup>1</sup>, have at *f* a cross pin above and forward of the pivoting point *a*<sup>1</sup>, while the upper side of the lever B has notches *b* (two being shown in the present instance) to engage the cross pin *f*. The rear or free end of the lever B will bear upon the upper or outer side of the lever A, as shown in Fig. 1. By the described system of levers, with the two levers A and B fulcrumed to the handle lever E, when the handles *a* and *e* are pressed towards each other, the cross pin *f* bears down with great force upon the lever B, while the outer or free end of the latter bears upon lever A,

and the chain is drawn tight around the disk D, but when the handles *a* and *e* are no longer pressed towards each other, the chain will be free enough to be slipped around the circumference of the disk to get a fresh grip. For a greater power, instead of having the outer or free end of the lever B rest upon the lever A, the lever B may be provided with a hole 5 (Fig. 1) through which a pin 6 may be passed to meet the edges of the side plates *e*<sup>1</sup>, as illustrated in the modification Figs. 2 and 3, the pressure of the side plates on the pin 6, thus lifting the free end of the lever B, making a fulcrum at *f*.

In the modification, Figs. 2 and 3, my invention is shown as in the form of a pipe wrench and the band is shown in the form of a flexible steel strip C<sup>1</sup> connected to the ends of the levers A and B. This form of band is particularly useful for working on pipes of thin metal, and for polished surfaces. It may be lined with leather or other suitable material.

I claim as my invention—

1. A wrench, comprising a flexible band having two levers, A and B, connected to its opposite ends, the lever A having a handle, with another handled lever E to which the lever A is pivoted and which has a cross piece bearing on the lever B between the latter's point of connection to the flexible band and its free end.

2. A wrench, comprising a flexible band, levers A and B connected to its ends, one of said levers having a handle, in combination with a handled lever E, to which the levers A and B are fulcrumed, the free end of lever B being adapted to bear against lever A, substantially as described.

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

JOSEPH G. SWALLOW.

Witnesses:

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F. H. ABEELS.