(No Model.)

F. F. ASMUS.

WRENCH.

No. 423,509. Patented Mar. 18, 1890.

Fig. 1.

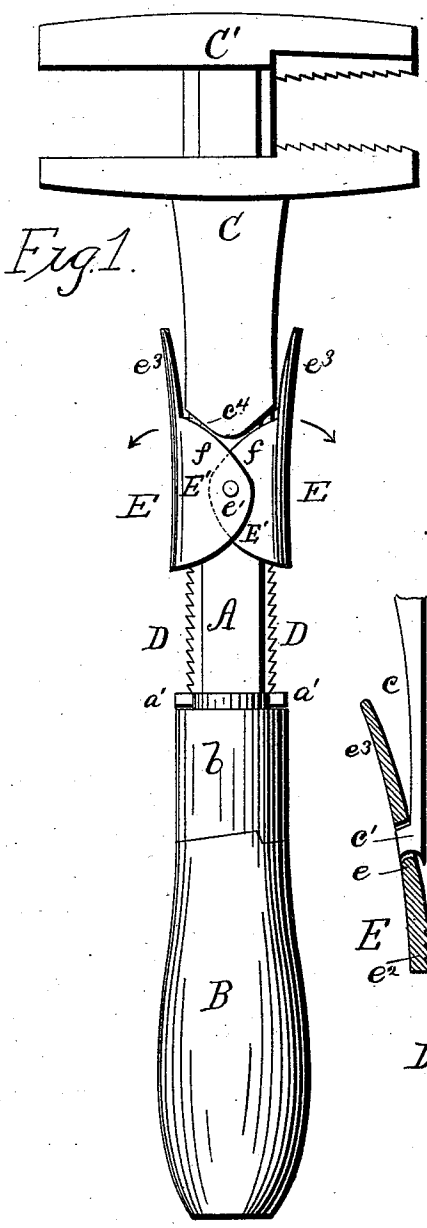


Fig. 2.

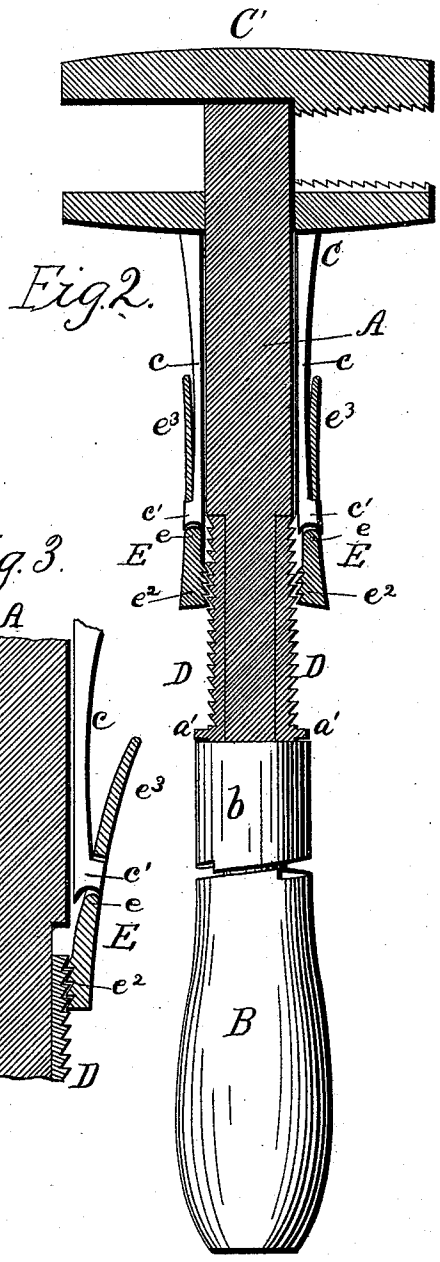
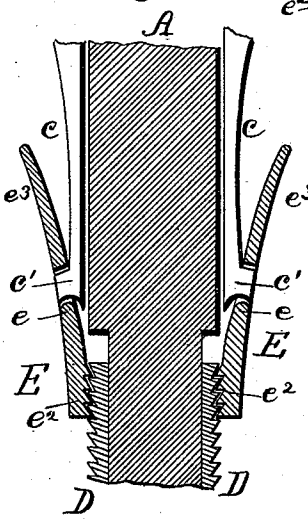


Fig. 3.



Witnesses
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By his Attorneys Sonde & Co

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UNITED STATES PATENT OFFICE.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 423,509, dated March 18, 1890.

Application filed January 10, 1890. Serial No. 336,466. (No model.)

To all whom it may concern:

Be it known that I, FREDRICK FRANK ASMUS, a citizen of the United States, residing at Hull Prairie, in the county of Wood and State of Ohio, have invented certain new and useful Improvements in Wrenches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improvement in wrenches; and the same consists in certain details of construction of the same, as and for the purposes as will be hereinafter more fully described, and pointed out in the claims.

The object of my invention is to form a wrench having a movable jaw that will be easy of adjustment, strong and durable, yet simple in construction and operation; and to this end I proceed as follows, reference being had to the accompanying drawings, wherein—

Figure 1 is a view in elevation of a wrench constructed according to my invention, and Fig. 2 is a sectional elevation of the same. Fig. 3 is a detail sectional view on an enlarged scale, the pawls in this view being shown as in engagement with the racks, while in Fig. 2 the said pawls are shown as in their disengaged position.

The letter A indicates the body of the wrench, or the "shank," as it is called; B, the handle; C′, the stationary jaw, and C the movable jaw.

D D are the racks, and E E the pawls, whereby the movable jaw is held in its adjusted position.

As shown, the wrench is made with a double head; but a single head may be used instead; and upon opposite sides of the shank A are arranged in suitable guideways racks D D, that have a slight longitudinal adjustment through the action of a cam-collar *b* on the top end of the handle B, engaging projections *a′ a′* at the lower extremity of said racks.

At opposite sides of the movable jaw C, and forming a part thereof, is a bar *c*, that terminates in a socket end *c′*, which socket end rests upon a curved shoulder *e* of the pawls E E. These pawls E E are pivoted together, as at *e′*, and are formed with teeth e^2 at their lower extremity and an outwardly-curved top end e^3.

As shown at *f*, the top edges of the sides E′ of the pawls E are curved, and a somewhat similar curvature is given to the lower end of the movable jaw C, as at c^4, so that the pressure exerted by said jaw upon the top edges of the sides E′ will cause said sides to spread, as indicated by the arrows in Fig. 1, and thus tightly force the teeth e^2 of said pawls into engagement with the racks D D, and in addition to this the pressure of the socket end *c′* of the bar *c* of the said movable jaw upon the shoulder *e* of the pawls has a tendency to force the lower ends of the pawls toward the shank. Thus a secure grip is assured of the pawls upon the rack when the wrench is in use without the use of springs, and to release the said pawls a simple closure of the hand upon the top ends e^3 of said pawls, so as to force them toward the shank of the wrench, as shown in Fig. 2, will release the pawls from engagement with the racks and permit the jaw to be adjusted as desired.

When the wrench is formed with a double head, as here shown, it is proposed to provide one side of said head with teeth, as shown; and in order to provide for any slight adjustment that may be necessary to cause the jaws to closely fit a nut the racks are made movable, as before stated; but said racks may be stationary with the shank, if preferred.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a wrench of the nature described, in combination with the stationary jaw and handled shank, with rack upon opposite sides thereof, the movable jaw sliding on said shank, having the lower extension or bar *c*, with socket end *c′*, and pawls E E, pivoted together and having teeth e^2, that engage the rack, shoulder *e*, to receive the end *c′* of the movable jaw, and handle ends e^3 e^3, substantially as shown and described, for the purposes specified.

2. In a wrench of the nature described, in combination with the stationary jaw and handled shank, the movable jaw sliding on

said shank and having the curved end c^4, and pawls E E, having the curved top edges, as shown and described.

3. The combination, in a wrench, of the stationary jaw and shank, movable jaw sliding on said shank, with curved ends c^4 and extension c', movable racks upon the shanks and cam upon the handle for operating said racks, and pawls E E, having sides E′, pivoted together, and with a curved top edge f, shoulder e, handle end e^3, and teeth e^2, all constructed as and for the purposes described and shown.

In testimony whereof I affix my signature in presence of two witnesses.

FREDRICK F. ASMUS.

Witnesses:
L. E. YOST,
WM. H. BRERETON.