No. 712,239. Patented Oct. 28, 1902.

J. F. BARRETT.

WRENCH.

(Application filed July 22, 1902.)

(No Model.)

Fig. 1,

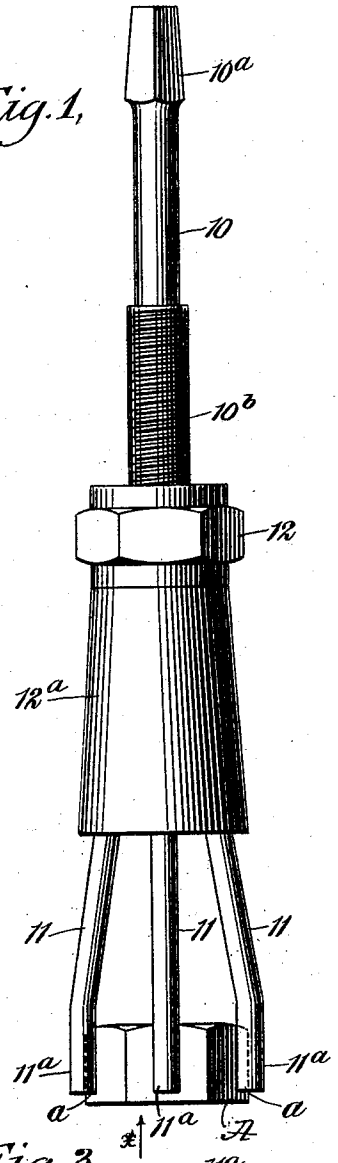


Fig. 2,

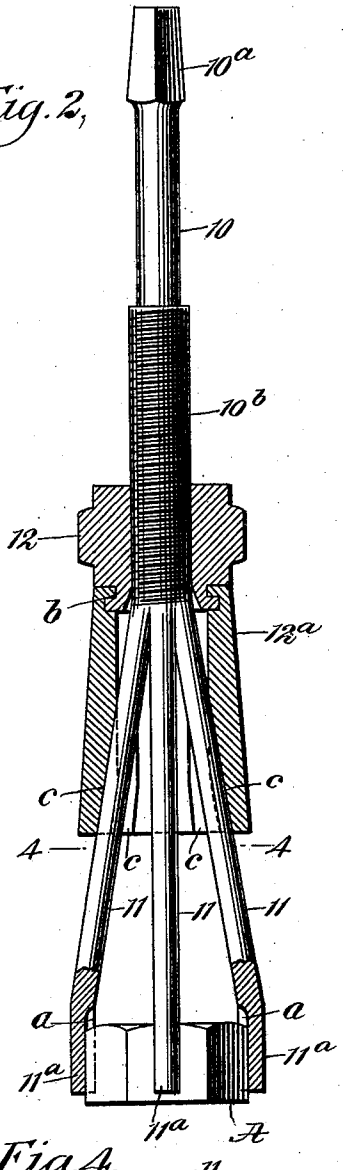


Fig. 3,

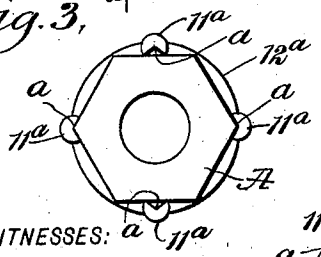


Fig. 4,

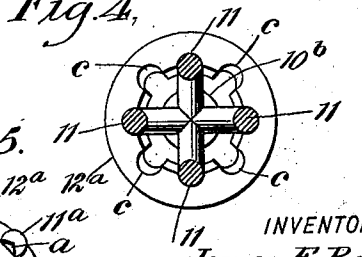
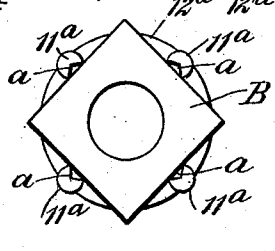


Fig. 5.



WITNESSES:

Edward Thorpe.

Wm. P. Patton

INVENTOR

James F. Barrett

BY Munn & Co.

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES FRANCIS BARRETT, OF CARBONDALE, PENNSYLVANIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 712,239, dated October 28, 1902.

Application filed July 22, 1902. Serial No. 116,492. (No model.)

To all whom it may concern:

Be it known that I, JAMES FRANCIS BARRETT, a citizen of the United States, and a resident of Carbondale, in the county of Lackawanna and State of Pennsylvania, have invented a new and Improved Wrench, of which the following is a full, clear, and exact description.

This invention has for its object to provide a novel wrench to be used in connection with a woodworker's hand-brace, the improved tool having a shank for engagement with the socket of the brace or gripping-chuck thereon to be rotated by the rotation of the brace and by engagement of the opposite end of the wrench with a nut on a screw-bolt turn the nut, so as to wind it on the bolt or remove it therefrom.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of the improved wrench and of a nut gripped in the jaws of the wrench. Fig. 2 is a sectional side view of the same. Fig. 3 is an end view of the wrench and nut held therein seen in direction of arrow x in Fig. 1. Fig. 4 is a transverse sectional view substantially on the line 4 4 in Fig. 2; and Fig. 5 is an end view of the wrench, showing it engaging a square nut.

In the drawings that show the construction and application of the invention, 10 represents the shank or body portion of the device, preferably provided with an angular head 10^a at one end. A screw-thread 10^b is formed on an extension from the shank 10, and this extension may with advantage be of greater diameter than the shank. From the threaded portion 10^b a plurality of arms 11 are projected, these arms diverging an equal degree toward their free ends, and near said ends a gripping member 11^a is formed on each arm.

As shown, four arms 11 are provided and arranged oppositely in pairs, the gripping members or jaws 11^a, that are rendered normally parallel on their inner surfaces, having a longitudinal V-shaped kerf or channel a formed therein, as is best shown in Fig. 3.

The material employed in the manufacture of the described parts should be slightly resilient and have such rigidity as will adapt the device to resist torsional strain, steel being best adapted for the purpose.

Upon the threaded portion 10^b of the shank 10 a nut 12 is mounted, the threaded engagement of the nut permitting it to be screwed readily from one end of the male thread 10^b to the other end of the same. From the nut 12 a sleeve 12^a is extended at one end thereof and is preferably swivel-connected therewith, as shown in Fig. 2 at b. The sleeve 12^a may with advantage flare somewhat toward its open end, and in the inner surface a plurality of longitudinal channels c are formed, which are spaced apart equally and correspond in number with that of the arms 11.

In use the head portion 10^a of the shank 10 is placed in the socket of a carpenter's brace, (not shown,) and the free ends of the arms 11 receive between their clamping ends 11^a a nut that is to be screwed upon or removed from a screw-bolt. Should the nut be four-sided, as shown at B in Fig. 5, the sleeve 12^a is moved endwise by rotation of the adjusting-nut 12, so as to press the four equally-spaced arms 11 toward the respective sides of the nut B and cause the clamping members 11^a to grip said nut B between them.

The swivel connection b of the nut 12 with the sleeve 12^a facilitates the adjustment of the sleeve, so that appropriate channels c are disposed opposite respective arms 11, that will be embedded in the channels and the arms be stiffened thereby to resist torsional strain. When the arms 11 are clamped upon a six-sided nut, such as A, as shown in Figs. 1, 2, and 3, two opposite arms are disposed at opposite angles of the nut, so that the grooves a therein will receive said corners of the nut A, and the remaining pair of arms 11 will be impinged upon opposite sides of said nut A, as is shown in Fig. 3.

It will be seen that the improved wrench may be quickly engaged with angular nuts and also that it may be employed to grip a bolt-head for its insertion into wood or other material, whereby screw-bolts that are cut with coarse threads and known as "lag-screws" may be driven into wooden material by the use of the tool and a brace, which will

greatly expedite such work, that is usually effected with an open-end wrench.

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

A wrench, comprising a shank, an angular head on one end of said shank, a screw-thread on the shank and of greater diameter than the head, four divergent spring-arms on the opposite end of the shank, the free ends of said arms having clamping members thereon that are grooved on their inner sides, an adjusting-nut engaging the thread on the shank, and a sleeve swivel-connected by one end with the adjusting-nut, said sleeve being flared toward its free end and provided with a plurality of spaced channels in its inner surface.

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

JAS. FRANCIS BARRETT.

Witnesses:
M. H. CARLTON,
WM. W. WALKER.