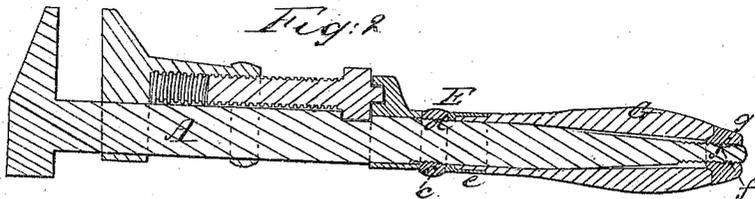
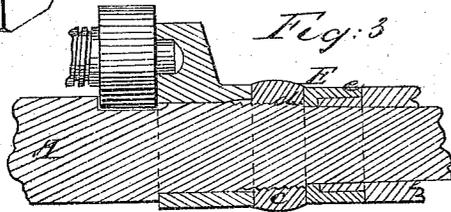
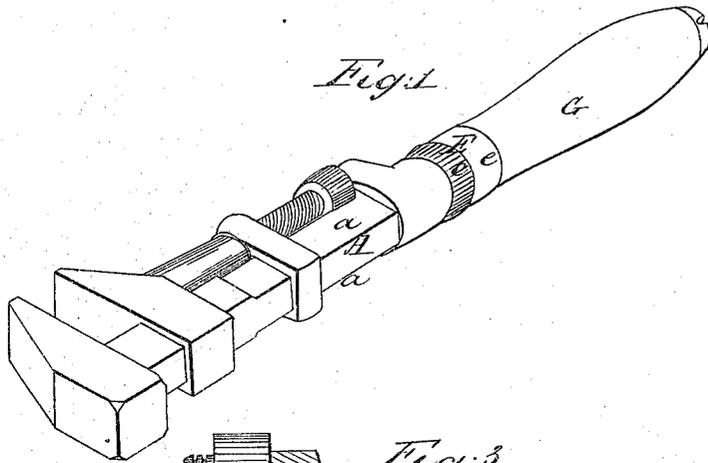


A. G. Coes.

Wrench.

N<sup>o</sup> 100,602.

Patented Mar. 8, 1870.



Witnesses.  
Edward Griffith.  
Geo A Leong

Inventor.  
Avery G. Coes  
by his Attorney,  
Frederick Curtis

# UNITED STATES PATENT OFFICE.

AURY G. COES, OF WORCESTER, MASSACHUSETTS.

## IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. 100,602, dated March 8, 1870.

*To all to whom these presents shall come:*

Be it known that I, AURY G. COES, of the city and county of Worcester, and State of Massachusetts, have made an invention of certain new and useful Improvements in Wrenches; and do hereby declare the following to be a full, clear, and exact description thereof, due reference being had to the accompanying drawings, making part of this specification, and in which—

Figure 1 is a perspective representation, and Fig. 2 a longitudinal section, of a wrench in which my improvements are embodied. Fig. 3 is a section of a portion of the same on an enlarged scale or full size, the more clearly to illustrate one feature of my invention.

The improvements herein described are based upon a class of wrenches now in extensive use, known as "screw-wrenches," and which consist, briefly, of a stationary end jaw, making part of an attenuated bar, upon which the movable jaw slides to and fro thereof, with respect to the stationary jaw, the movement of such movable jaw being effected by means of a screw which passes through it, and which is pivoted or connected to the lower part of the bar, and stepped within a suitable bearing applied thereto to prevent its displacement.

My present improvements have reference to the peculiar arrangement of the step of the screw and of the nut which confines such step in place, by which economy in manufacture and finish in appearance is secured.

In carrying out my present invention I have selected as a basis wherewith to illustrate its utility a wrench shown and described in Letters Patent of the United States numbered 50,364, and dated October 10, 1865. In this wrench, the ferrule which screws upon the shank of the bar and confines the step of the movable jaw-screw in position is composed of a polygonal portion, which serves as a nut whereby to secure it upon the shank, and with a cylindrical portion, to coincide with the end of the handle which enters it. In such a construction of parts I have found that the block, owing to its diversified face, is much more difficult to produce in bulk, and especially

more difficult and expensive to finish, than when constructed as contemplated by the second portion of my invention.

In order to carry my invention into effect, I produce the ferrule E in two parts, the upper one, *c*, or that abutting against the lower end of the bar of the wrench, or a shoulder, *b*, formed thereupon, being cylindrical in cross-section and milled, in order to serve as a means to screw it upon the screw *d*, cut upon the shank, and the lower portion, or that denoted by the letter *e* in the drawings, being also cylindrical, in order to correspond to the end of the handle G, which should preferably extend a short distance into it.

The portion *e* of the ferrule may or may not screw upon the shank, and the extreme lower end of the shank should be provided with a screw, *f*, upon which is screwed a nut, *g*, to secure the handle firmly in place.

A ferrule made as described will be found to answer all the useful purposes of the patented one before mentioned, while it is susceptible of being produced with a high degree of finish and at much less cost than such patented one.

Although to the uninitiated my present improvement may seem trifling and unimportant, yet my experience as a manufacturer has demonstrated the fact that in a large number of wrenches the difference in cost between the two forms of ferrule hereinbefore described is a matter of considerable importance, while the improved finish of the nut portion of said ferrule and the reduced weight of the shank render a wrench thus provided much more desirable than under any form heretofore adopted.

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

The combination, with the handle G and shank of the wrench, of the ferrule E, composed of the two independent portions *c* and *e*, substantially as and for the purposes set forth.

AURY G. COES.

Witnesses:

FRED. CURTIS,  
EDWARD GRIFFITH.