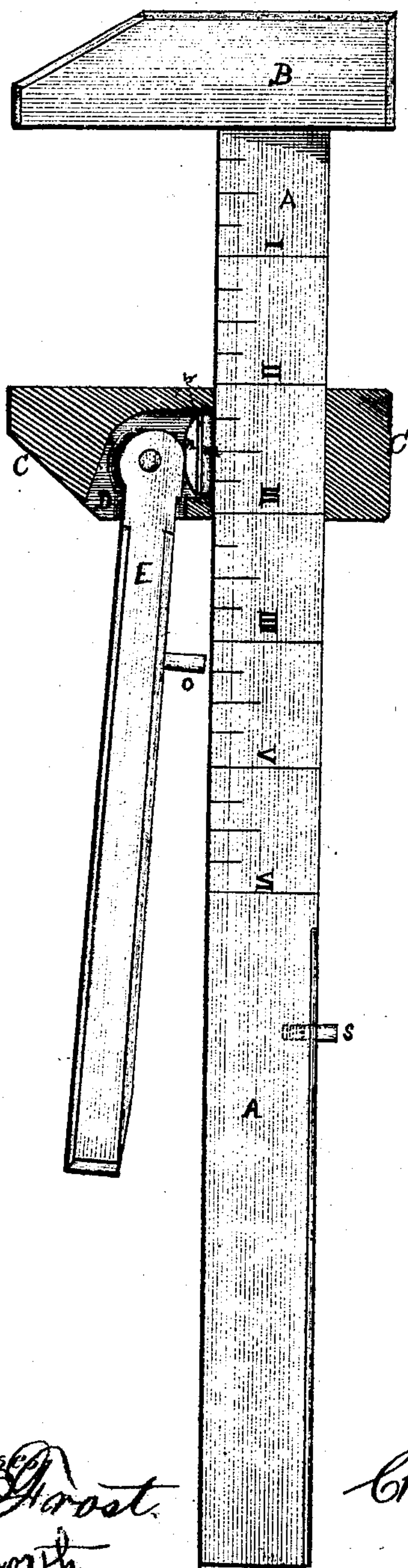


C. Knisely,

Wrench.

No. 109,913.

Patented Dec. 6. 1870.



Witnesses:
E. A. Frost.
E. A. Cresswell.

Inventor:
Christian Knisely

United States Patent Office.

CHRISTIAN KNISELY, OF CHICAGO, ILLINOIS.

Letters Patent No. 109,913, dated December 6, 1870.

IMPROVEMENT IN WRENCHES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, CHRISTIAN KNISELY, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful improved Wrench; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which the figure is a side elevation of a wrench with the movable jaw broken away to show the application of my improvements.

My invention has for its object to improve the construction and operation of wrenches; and to this end,

It consists in the combination, with the handle or shank and a removable jaw, of a cam-lever and two or more movable gripping-plates, whereby the jaw is held firmly at any desired point upon the handle, as will be hereinafter more fully described.

In the accompanying drawing—

A is the handle, and

B, the fixed jaw of a wrench for removing or applying nuts to bolts.

C is the movable jaw, adapted to slide upon the handle A in the usual manner.

This jaw is provided with a recess, D, extending from its under side to the opening through which the handle A passes, as shown in the drawing.

E is a cam-lever, pivoted within the recess D, and extending along the handle, to be grasped by the operator.

Between the cam end of the lever and the shank A one or more movable metal plates are inserted.

In this example two plates, *m n*, are employed, the former being provided with sharp, file-like corrugations placed in contact with the shank A.

The plate *n* is slightly rounded upon its side next the cam, to permit the easy movement of the latter.

When it is desired to set the wrench to a nut the

lever is moved outward from the shank, to relieve the pressure of the cam upon the plates *m n*, and the jaw moved upon the graduated shank to the requisite position. The lever is then forced by the hand of the operator toward the shank, and the cam, acting against the gripping-plates, forces the corrugations of the plate *m* sharply against the shank, and securely locks the jaw in position.

The movement of the latter toward the shank is arrested by the pin *o* in the former, and a screw, *s*, in the latter, prevents the movable jaw from sliding off when released by the cam.

The plates *m n* are made removable, and may be removed from time to time when for any cause this becomes necessary.

The movable jaw and the handle are so constructed that the former may, by removing the screw *s*, be slid off of the handle for the purpose of adjusting the plates *m n*, or for any other purpose required.

It sometimes occurs that the cam does not force the plates in contact with the shank with sufficient power to hold the jaw firmly in position. This, however, is easily overcome by placing a thin strip of paper or other thin substance between the two plates, as shown at *w* in the drawing.

If desired, the plate *m* may be made without the corrugations, as they are not absolutely essential to the successful operation of the wrench.

Having thus described my invention,

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

The plate *n*, when arranged between the plate *m* and the eccentric head of the lever E, substantially as described.

CHRISTIAN KNISELY.

Witnesses:

G. H. FROST,
JOHN JONES.