

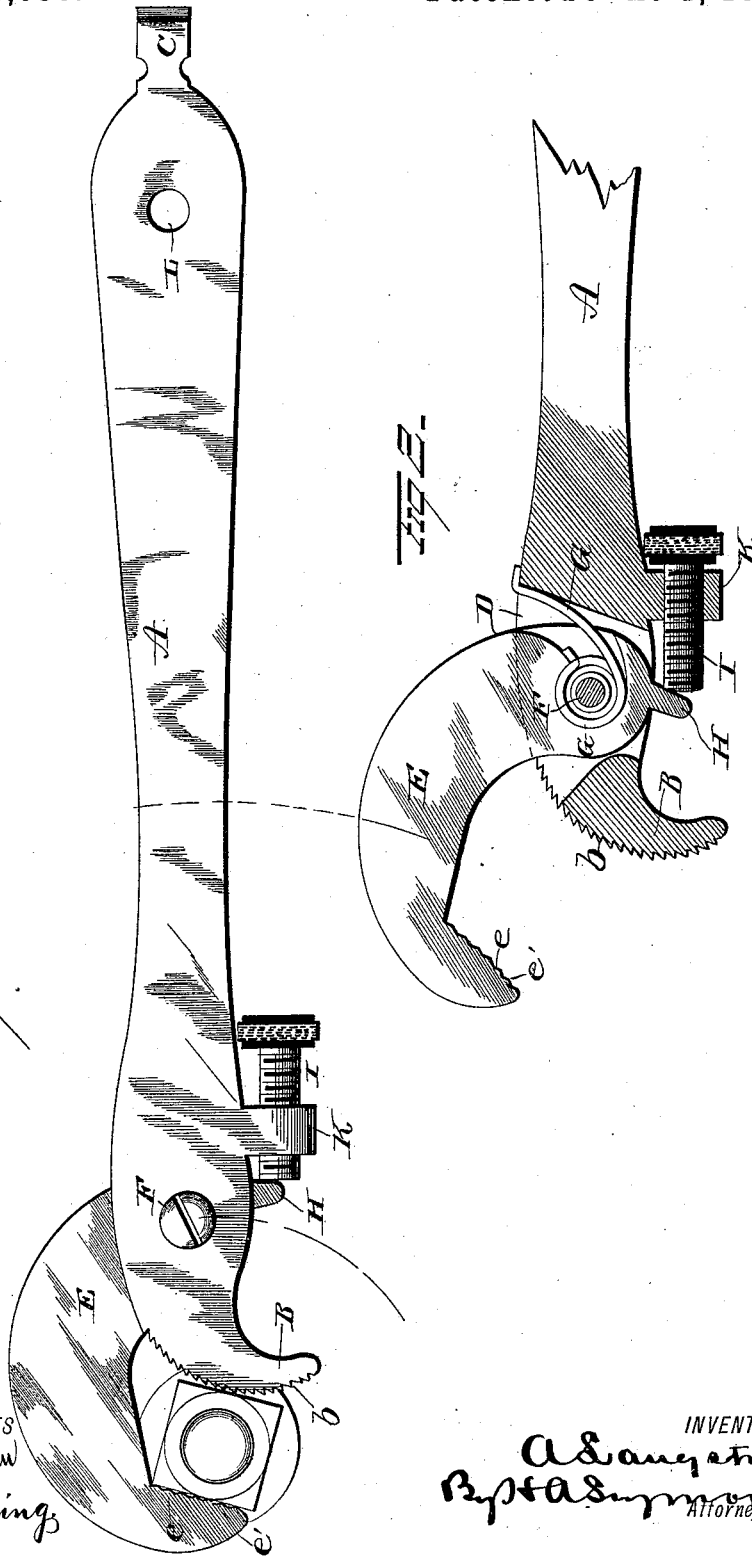
(No Model.)

A. LANGSTROM.

WRENCH.

No. 343,038.

Patented June 1, 1886.



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WRENCH.

SPECIFICATION forming part of Letters Patent No. 343,038, dated June 1, 1886.

Application filed March 10, 1886. Serial No. 194,690. (No model.)

To all whom it may concern:

Be it known that I, ALBERT LANGSTROM, of Council Bluffs, in the county of Pottawattamie and State of Iowa, have invented certain new and useful Improvements in Wrenches; and I do hereby 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 relates to an improvement in wrenches. The object is to provide a nut-wrench which will readily adjust itself to nuts of different sizes, and which may be manufactured at a low cost. A further object is to provide a light and at the same time powerful wrench, convenient for ordinary use.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents the wrench in extreme closed adjustment applied to a nut, and Fig. 2 represents the same partly in section in extreme open adjustment.

A represents the handle of the wrench, which is formed, preferably, of cast-steel or of cast-iron with steel-faced jaw, and terminates at one end in a curved-faced gripping-jaw, B, and at the opposite end in a screw-driver, C. The handle becomes gradually thicker and narrower as it extends toward the jaw, thereby disposing the metal to the best advantage for securing lightness and strength. The thick portion of the handle at the base of the jaw B is provided with a taper slot, D, extending through it from back to front, as shown in Fig. 2. Within the slot D one end of the curved swinging jaw E is pivotally secured, preferably by a screw-bolt, F. The gripping-face *e* of the swinging jaw E is preferably flat, as shown, and provided with a series of corrugations, *e'*.

The swinging jaw E is thin and wide where it works in the slot D, but gradually becomes thicker and narrower as it extends toward the gripping-face, thereby making the jaw as light as is consistent with the strength required in withstanding the greatest strain to which it will be liable to be submitted.

When the jaw E is swung forwardly into contact with the front end of the slot D, its gripping-face *e* will be in nearest adjustment to the curved face of the jaw B, and when swung back into contact with the rear end of the said slot it will be in extreme open adjustment. The adjustment of the wrench to any nut between these two extremes is almost instantaneous and automatic. The curved-faced jaw B is provided with a series of ratchet-shaped teeth, *b*, slanting toward the end of the jaw. When placed in adjustment on a nut, the curved face of the jaw B at the point where it engages the side of the nut becomes the fulcrum of a lever, and is prevented from slipping by the ratchet-teeth *b*; or the grip of the curved face of the jaw might be sufficient to form a secure hold without the ratchet-teeth. The face *e* of the jaw E being at the same time in contact with the opposite side of the nut, the power applied to the handle at right angles to its length tends, through the attachment of the jaw E to the handle, to draw the jaw E into snug contact with the nut. The greater the strain on the handle the tighter the grip. The direction in which the power is applied and the path in which the pivotal point of attachment of the jaw to the handle tends to travel are shown in dotted lines in Fig. 1.

To hold the swinging jaw E in a normally-closed adjustment, a coiled spring, G, is employed. The side of the jaw E within the slot D is conveniently cut away the thickness of the wire spring, and the latter is coiled around the pivotal bolt F, one end being attached to the jaw E and the other to the handle.

To conveniently lock the jaw E in any desired open adjustment, its end in the handle is provided with a lug, H, projecting a short distance out of the slot in front of the handle, and a set-screw, I, is adapted to work in a perforated lug, K, formed integral with or secured to the handle at the edge of the slot D. The end of the screw I, pressing against the lug H, tends to tilt the jaw E backwardly and to lock it in open adjustment.

For convenience in hanging the tool up on a nail or fastening a strap or string thereto, it is provided with a perforation, L, near the screw-driver end of the handle.

It is evident that slight changes might be resorted to in the form and arrangements of the several parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but,

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

10 1. The combination, with a handle terminating in a curved-face gripping-jaw, and having a perforated lug, of a gripping-jaw pivotally secured to said handle, and provided with a projecting lug and a set-screw working
15 in the perforated lug of the handle and engaging the lug of the pivoted gripping-jaw, substantially as set forth.

2. In a wrench, the combination, with a stationary jaw and a spring-actuated swinging jaw secured in a slot formed in the base
20 of the stationary jaw, of an adjusting-screw working in a perforated lug on the stationary jaw and adapted to engage a lug on the swinging jaw and lock the same in the desired open
25 adjustment, substantially as set forth.

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

ALBERT LANGSTROM.

Witnesses:

THOS. TOSTEVIN,
WM. ARUD.