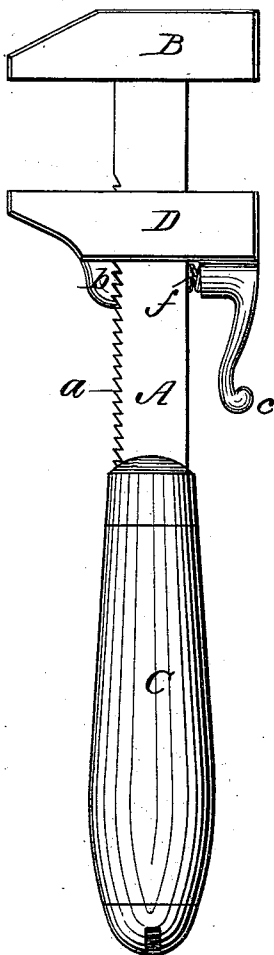


S. C. ENGLUND.
WRENCH.

No. 191,412.

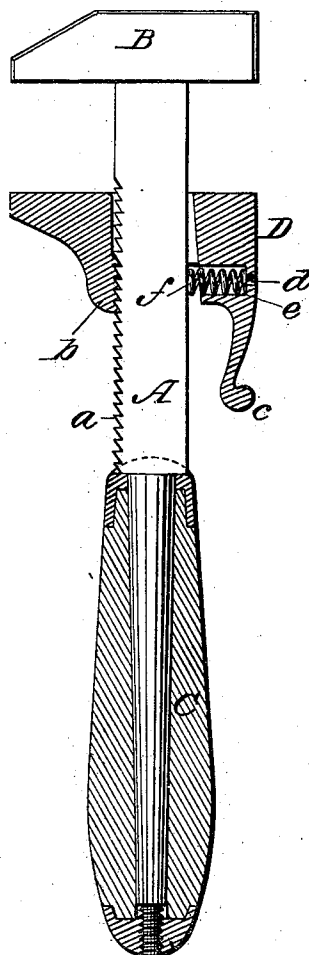
Patented May 29, 1877.

Fig. 1.



Witnesses:
Will H. Dodge
Donn A. Twitchell.

Fig. 2.



Inventor:
S. C. Englund
By his Atty.
Dodge & Son

UNITED STATES PATENT OFFICE.

SAMUEL C. ENGLUND, OF MOLINE, ILLINOIS.

IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. **191,412**, dated May 29, 1877; application filed May 1, 1877.

To all whom it may concern:

Be it known that I, SAMUEL C. ENGLUND, of Moline, in the county of Rock Island and State of Illinois, have invented certain Improvements in Adjustable Wrenches, of which the following is a specification:

My invention relates to that class of wrenches in which a sliding jaw is mounted on a rack-bar, and caused to lock fast thereon by means of a spring, and the object of the invention is to lessen the expense of making and applying the spring to protect it from injury, and to admit of its being readily replaced by a new one without removing the jaw from the wrench; to which end the invention consists in casting the jaw with a suitable socket and mounting a spiral spring therein in such manner as to bear directly on the bar and leave its inner end exposed so that it may be grasped and drawn out of the socket, and in forming a small opening in the back of the socket, through which a new spring may be inserted.

Figure 1 represents a side view of my improved wrench; Fig. 2, a longitudinal section of the same.

A represents the body or bar of the wrench, provided on its face with transverse ratchet-teeth *a*, and on opposite ends with a fixed jaw, B, and a handle, C, which latter may be made of any suitable form and attached in any suitable manner, or omitted entirely.

D represents the sliding jaw, mounted on the bar A and provided with a toothed arm, *b*, which may be caused to engage in the teeth of the bar, so as to hold the jaw fast at any desired point thereon. The opening through the sliding jaw to receive the bar A is widened or enlarged at the rear, as shown, in order to permit the jaw to rock or tilt sufficiently to engage and disengage the arm *b*. On the rear side of the sliding jaw there is formed a rigid arm or thumb-piece, *c*, extending toward the handle, as shown, so that the attendant, grasping the wrench in one hand, can, by placing his thumb on the piece *c*, unlock and move the jaw at will. On the inside of the back of the sliding jaw there is formed a round socket, *e*, in which there is mounted a spiral spring, *f*, bearing on the back of the

bar A, and causing the sliding jaw to lock fast and remain locked whenever the operator removes his thumb from the arm *c*. In constructing the wrench the spring may be, and generally is, inserted through the interior of the jaw into the socket before the jaw is applied to the bar A. In order that a new spring may be introduced after the jaw is applied and the handle fastened on the bar, so as to prevent the removal of the jaw, a small hole, *d*, is made through the back of the jaw into the socket, as shown in Fig. 2. The old spring being first removed by taking hold of its inner end and drawing it forcibly out of the socket, one end of the new spring is inserted into the hole *d*, and the spring rotated and pressed forward until it is wormed or screwed wholly into the socket. In making the wrench the movable jaw is cast complete, with the socket and the hole *d* therein, ready to receive the spring, without being finished or fitted in any respect. The spring, which may be formed from brass or steel wire at a trifling cost, requires none of the filing, drilling, or other fitting necessary to the customary flat steel springs, and, unlike them, is seated loosely in its place without requiring screws, pins, or other devices to retain it in place. By my method of constructing and arranging the parts I am enabled to greatly reduce the usual cost of constructing this class of wrenches, while at the same time I give the spring a better protection than usual against dirt and rough usage, and also employ a spring, which is less liable to be set or broken than the flat steel springs hitherto employed.

I am aware that the combination of a toothed bar, a sliding jaw, and a spiral spring concealed in a sliding bolt and arranged to press the same against the bar to cause the locking of the jaw, is old; and I am also aware that spiral springs and sliding jaws have been combined in various other ways, and I therefore wish it understood that I make no claim to said features, except when they are constructed and arranged in the peculiar manner shown in the drawings.

Having described my invention, what I claim is—

1. The combination of the toothed bar A, the sliding jaw D, cast complete in one piece, with its toothed arm *b*, arm *c*, and socket *e*, and the spiral spring *f* seated in the socket and arranged to bear directly upon the bar, with its inner end exposed, as and for the purpose described.

2. In combination with the bar A, the slid-

ing jaw D, provided with the socket *e*, to receive a spiral spring, and with the hole *d* to permit the insertion of the spring without removing the jaw from the bar.

SAMUEL CHRISTOFFER ENGLUND.

Witnesses:

HENRY E. LEWIS,

HENRY H. HILL.