

UNITED STATES PATENT OFFICE.

JAMES C. BURGESS, OF SHERIDAN, INDIANA, ASSIGNOR OF THREE-FOURTHS TO ANDREW WEAVER, JOSEPH A. WEAVER, PERLEY WEAVER, AND HOWARD H. NEWBY, OF SHERIDAN, INDIANA.

ADJUSTABLE WRENCH.

SPECIFICATION forming part of Letters Patent No. 689,606, dated December 24, 1901.

Application filed September 30, 1901. Serial No. 77,027. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. BURGESS, a citizen of the United States, residing at Sheridan, in the county of Hamilton and State of Indiana, have invented certain new and useful Improvements in Adjustable Wrenches; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to the class of wrenches that are designed to be adjusted to nuts for operating them, and it has particular reference to the adjustable jaw and the parts that are designed to be connected therewith for adjusting and fixing the jaw so as to be tight on the shank.

The object of the invention is to provide an inexpensive wrench in which the movable jaw may be closely adjusted and retained so that it may not become loose and shift while in use and a wrench which will be durable and economical in use.

My invention consists in the novel parts and in the combination and arrangement of parts embodied in the features of construction as hereinafter particularly described, and pointed out in the claims.

Referring to the drawings, Figure 1 represents a wrench perspective as constructed in conformity to my invention; Fig. 2, a fragmentary sectional view showing the jaw in a locked position; Fig. 3, a fragmentary sectional view showing the jaw unlocked; Fig. 4, a top plan view of the jaw-latch, and Fig. 5 a top plan view of the dead-lock and operating-lever for the jaw-latch.

In the drawings similar reference characters in the several figures indicate corresponding parts.

In construction the shank A forms the lever and handle necessary in such tools, and it may have a grip-piece at the tail end thereof. It has a suitable jaw *a*, which, as is usual, may be adapted to be used also as a hammer.

The back of the shank A has V-shaped rack-teeth *b* of suitable number.

The jaw B includes an extension B', and it is adapted to fit to and slide along on the shank A, and it is provided with ears C C', extending from the jaw proper along the sides and beyond the back of the shank A, the ears having an axle-shaft *d* extending across and somewhat near the back of the shank from ear to ear. At the extremity of the extension B' ears D D' extend therefrom along the sides and beyond the back of the shank A and are provided with a pivot-pin *e*, extending from ear to ear across the said back a convenient distance therefrom. A toothed wheel E is mounted on the axle *d*, with the teeth thereof fitting to and engaging some of the teeth *b*, the adjustment being such that the wheel is always in contact with rack-teeth. A dead-lock, comprising a cam F, is mounted on the pin *e* and has a lever *f* sufficiently broad at its free end to extend over the sides of the shank A as it rests near the back thereof. A jaw latch-bar G, having a tail H of suitable length, rests upon and may slide upon the back of the shank between the ears C C' and D D', the tail H extending below the cam F, the latch also including a head G', having teeth *g*, adapted to engage the teeth of the wheel E, and having also, if desired, teeth *h*, preferably of half-V form, adapted to engage the rack-teeth *b*; but in some proportions of parts these teeth *h* may be omitted. The latch-bar G has a shoulder K, adapted to be engaged by the cam F, and it has a recess J at one side thereof extending into the tail H, and at one end of the recess is a shoulder *i* and at the opposite end thereof a shoulder *j*, which may be engaged by a finger I, that extends from the cam F.

Behind the jaw B is an adjusting-screw *k*, inserted in the extension H and extending to the shank A, the screw having a lock-nut *l*, which is employed for taking up lost motion due either to rough-finishing of the tool or to wear of the axle *d* or the hole in the wheel E, so as to insure close fitting of the wheel with the rack-teeth.

If desired, the tail H may be curtailed

somewhat, that shown being long enough to provide a rest for the lever *f* and also to permit it to be pushed down against the shank by the lever if the cam should elevate the tail somewhat in its operation.

In practical use the lever *f* may be elevated, as in Fig. 3, which will cause the finger in its movement to bear against the shoulder *j* and withdraw the teeth *g* from contact with the wheel E, permitting the jaw B to be moved along the shank A. If the jaw B be now moved to a desired position, the wheel E in such movement obviously will rotate on its axle in contact with the teeth *b*. Then the lever *f* may be pressed down, as indicated in Figs. 1 and 2, the cam engaging the shoulder K and forcing the teeth *g* into engagement with the teeth of the wheel E and preventing a backward movement of the jaw B, as will be obvious, the teeth *h*, if employed, dropping into contact with the teeth *b*. The shoulder *i*, as will be understood, is merely a clearance end of the recess J for the finger I. The manner of using the screw *k* will be understood, it being so adjusted as to permit free movement of the jaw B without unnecessary play.

Having thus described my invention, what I claim as new is—

1. In a wrench, the combination of a shank, a fixed jaw, rack-teeth at the back of the shank, ears attached to the movable jaw, a toothed wheel mounted in a pair of the ears

at the back of the shank and engaging the teeth thereon, a latch-bar having teeth engaging teeth of the toothed wheel and extending between two pairs of ears, two oppositely-disposed shoulders on the latch-bar, a dead-lock cam pivoted between a pair of ears and having members adapted to engage the shoulders, and a lever attached to the dead-lock cam.

2. In a wrench, the combination of the shank, the fixed jaw, the shank-teeth, the movable jaw, the ears in pairs attached to the movable jaw at the back of the shank, the pivotal pins extending between pairs of said ears, the toothed wheel mounted on one of the said pins and engaging said shank-teeth, the latch-bar having the teeth at one end thereof engaging said toothed wheel and also teeth engaging said shank-teeth and having the recess and the shoulder at the opposite end thereof, the cam mounted on one of said pins and engaging said shoulder and having the finger operating in said recess, the cam-lever, and the adjusting-screw at the back of said movable jaw opposing said toothed wheel, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES C. BURGESS.

Witnesses:

ALBERT C. PEARSON,
CHARLIE HETHERINGTON.