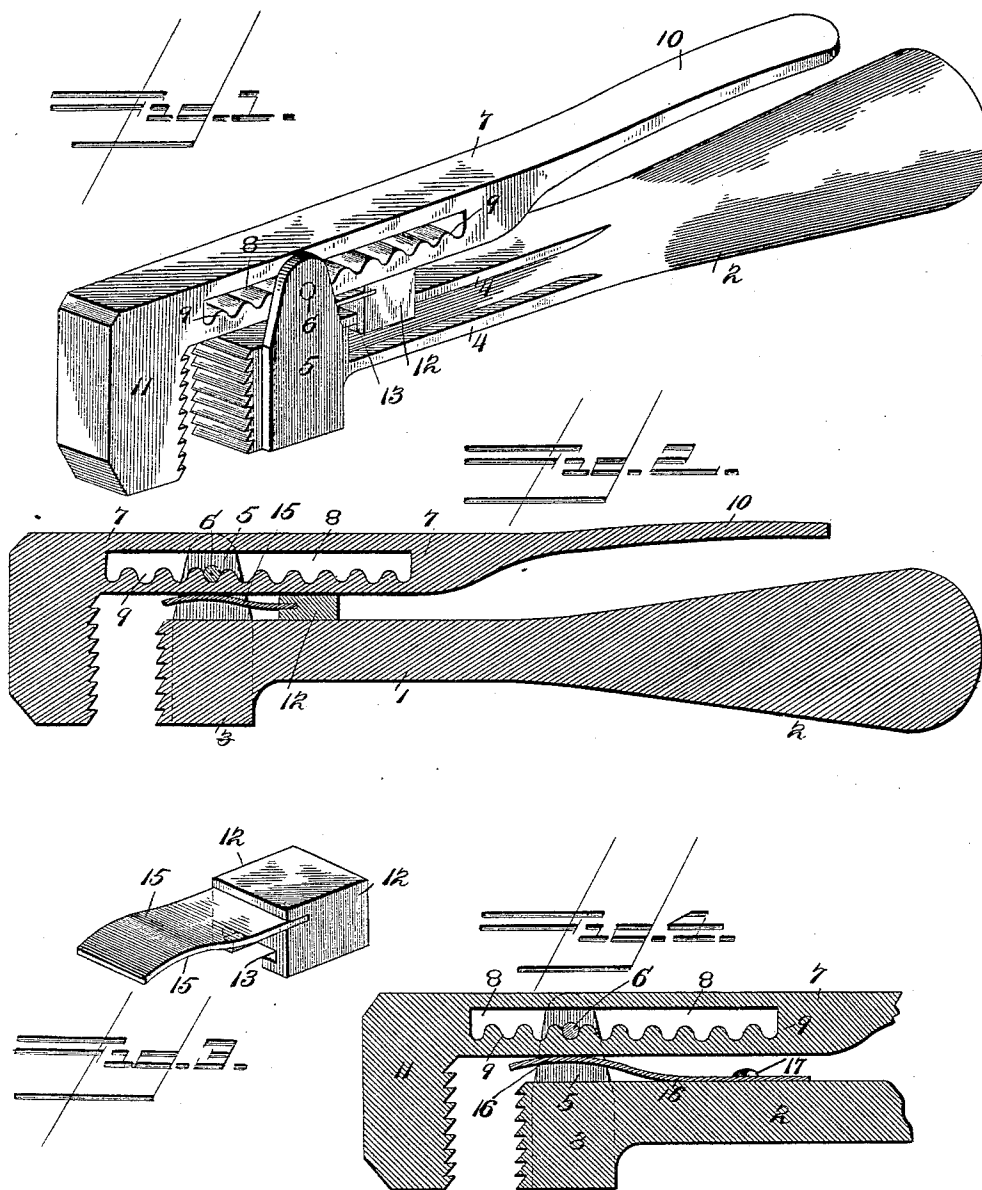


(No Model.)

C. C. FIELDS & W. S. DUVALL.
WRENCH.

No. 484,307.

Patented Oct. 11, 1892.



Witnesses

E. N. Stewart.

John H. Sigler.

Inventors

Charles C. Fields.

and

By their Attorneys, William S. Duvall.

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UNITED STATES PATENT OFFICE.

CHARLES C. FIELDS, OF BRISTOL, TENNESSEE, AND WILLIAM S. DUVALL, OF WASHINGTON, DISTRICT OF COLUMBIA; SAID FIELDS ASSIGNOR OF THREE-EIGHTHS TO ABRAM D. REYNOLDS AND JOHN B. CHILDERS, OF BRISTOL, TENNESSEE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 484,807, dated October 11, 1892.

Application filed July 13, 1892. Serial No. 439,893. (No model.)

To all whom it may concern:

Be it known that we, CHARLES C. FIELDS, of Bristol, in the county of Sullivan and State of Tennessee, and WILLIAM S. DUVALL, of Washington, District of Columbia, citizens of the United States, have invented a new and useful Wrench, of which the following is a specification.

Our invention relates to improvements in wrenches, the objects in view being to provide a wrench of cheap and simple construction that will be strong and durable, is adapted to efficiently operate upon pipes, rods, and nuts, is capable of being readily and quickly adjusted and locked in such adjusted positions as will adapt it to the various sizes thereof, and may be readily disengaged when necessary.

With these and other objects in view the invention consists in certain features of construction hereinafter specified, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of a wrench embodying our invention. Fig. 2 is a longitudinal section thereof. Fig. 3 is a detail in perspective of the locking-block and spring carried thereby. Fig. 4 is a modification of the wrench.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the wrench-stock, one end of which is reduced and otherwise shaped to form a convenient handle 2 and the opposite end of which is enlarged to form a triangular fixed jaw or foot 3, whose outer face is provided with a series of inclined teeth, whose disposition is toward the toe or outer end of the jaw. The rear face of the stock from a point above the handle to the foot is made flat or plain, and the opposite edges thereof are provided with a pair of parallel beads or ways 4. These beads or ways may be formed upon the stock in various ways, but in the present instance are produced by means of cavities with which the opposite faces of the stock are provided in order to reduce metal, and consequently the weight of the wrench. By continuing the beads or ways at their inner ends we permit of the ready introduction

or application of the locking-block, to be hereinafter described. To the opposite sides or faces of the foot or jaw 3 are applied or formed integral a pair of rearwardly-disposed bearing-ears 5, whose rear edges are inclined, or, in other words, the jaws are widened toward their bases to lend strength and withstand the lateral or torsional strain to which they are subjected when the wrench is inserted in sockets for operating upon nuts. These ears are connected by a transverse bearing-pin 6, which is located some distance from the rear side of the stock.

7 designates the lever for carrying the movable jaw. This lever is provided intermediate its ends with a longitudinal slot 8, the inner edge of which has a series of transverse semi-circular grooves 9, arranged at intervals. Through the slot 8 and designed to rest in any one of the grooves 9 is passed the pin 6 before mentioned. The rear extremity of the lever 7 is reduced to form a handle 10, while beyond the slot the lever is given an L shape or is provided with a right-angularly-disposed head or jaw 11, adapted to overlap the jaw 3 and coact therewith, for which purpose the face of the jaw 11 is provided with an inwardly-disposed series of inclined teeth.

12 designates a locking-block, whose inner face is provided with a T-shaped groove or rabbet 13, designed to engage the ways or beads 4 of the stock. The front face or end of the block has set therein a slightly-curved flat spring 15, whose free end in advance of the block rests against the under side of the lever 7 and normally holds said lever away from the stock and one of its grooves 9 in engagement with the pin 6. It will be seen that the block is capable of sliding upon the ways 4 and may be pushed forward readily by the hand, so as to wedge or jam between the lever and stock, and thus lock said lever to such an extent as will prevent its disengagement with the pin 6 and yet permit of a very slight movement pivotally of the lever.

The description of the construction having been completed, we will now proceed to describe the operation, first, however, mentioning that after the block is in position upon

the ways or beads the ends of said beads are slightly mashed, so as to prevent a withdrawal of the block. In order to adjust the wrench to any-sized rod, pipe, or nut, the block is drawn inward to its fullest extent or as far as is necessary and the lever pressed inward against the tension of the spring, whereby that groove 9 engaging the pin becomes disengaged. The lever is now pushed forward or drawn inward, the pin 6 passing through the slot 8 thereof, and when said lever has been adjusted to a proper point, so as to adapt the jaws for the size of pipe, rod, or nut to be operated upon, it is released, and the spring, acting upon the same, throws the lever outward, so that its groove that may be adjacent to the pin is engaged thereby. The block is now pushed forward under the lever to a point nearly but preferably not under the pin 6 and will permit of a limited movement upon the part of the lever, whereby it may be readily applied or removed from a pipe, rod, or nut. When once applied, the wrench is operated in the same manner as any ordinary rigid-jaw or spring-jaw wrench, whose operation is so well known as to require no specific description. It will be observed that the spring not only acts to maintain the lever in engagement with the pin 6, but also exerts an inward pressure and frictionally locks the block at a proper point upon the stock and prevents its slipping.

As shown in Fig. 4 of the drawings, we may omit the locking-block and depend upon the spring alone for locking the lever in engagement with the pin 6, but prefer to employ the block, as it renders the wrench much more efficient. In this figure the same numerals apply to the stock, lever, and their adjuncts, and 16 designates the flat spring, which in this instance is secured to the stock direct by a screw 17 and at its free end, which is located under the pin, bears against the inner side of the lever. By such an arrangement of the spring and locating of the notches at the inner edge of the slot the wrench may be operated or swung in either direction without danger of accidentally disengaging the notches and pin. Such, however, would not

be the case if the spring were located at the outside of the lever and forced the same inward, as in such construction the wrench would only be effectual when operated in one direction.

Having described our invention, what we claim is—

1. In a wrench, the combination, with a stock having its outer end shaped to form a jaw and its inner end shaped to form a handle and provided at opposite sides of its jaw with rearwardly-extending lugs, of a lever of L shape, the outer end of which constitutes a jaw overlapping that of the stock and the inner end of which is shaped to form a handle, said lever being provided between its ends with a longitudinal slot whose inner edge is provided with a series of transverse grooves, a pin passed through the ears and slot and adapted to engage the grooves, and a locking device mounted on the stock and adapted to be wedged between the lever and stock, substantially as specified.

2. In a wrench, the combination, with a stock terminating at one end in a jaw, provided at opposite sides of the same with rearwardly-disposed ears connected by a transverse pin, and in rear of the ears, at opposite edges, provided with beads or ways, of a lever of L shape, the outer end of which forms a jaw overlapping that of the stock, said lever being provided with a longitudinal slot whose inner edge is provided with a series of transverse grooves for engaging the pin, a locking-block whose under side is provided with a T-shaped recess for engaging the ways, upon which it is adapted to slide, and a spring having its inner end secured to the block and projecting forward and at its free end bearing against the under side of the lever, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

CHARLES C. FIELDS.
WILLIAM S. DUVAIL.

Witnesses:

JOHN H. SIGGERS,
HORACE G. PIERSON.

It is hereby certified that Letters Patent No. 484,307, granted October 11, 1892, upon the application of Charles C. Fields, of Bristol, Tennessee, and William S. Duvall, of Washington, District of Columbia, for an improvement in "Wrenches," was erroneously issued to Charles C. Fields, William S. Duvall, Abram D. Reynolds, and John B. Childers, as joint owners of said invention; whereas the patent should have been granted to said *Charles C. Fields, Abram D. Reynolds, and John B. Childers*, they being sole owners of the entire interest as shown by the assignments of record in the Patent Office; also that the words "three-eighths" in line seven of the grant should read *three-fourths*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 25th day of October, A. D. 1892.

[SEAL.]

CYRUS BUSSEY,

Assistant Secretary of the Interior.

Countersigned:

N. L. FROTHINGHAM,

Acting Commissioner of Patents.