

(No Model.)

J. W. JOHNSON & R. WHITAKER.
WRENCH.

No. 588,438.

Patented Aug. 17, 1897.

Fig. 1.

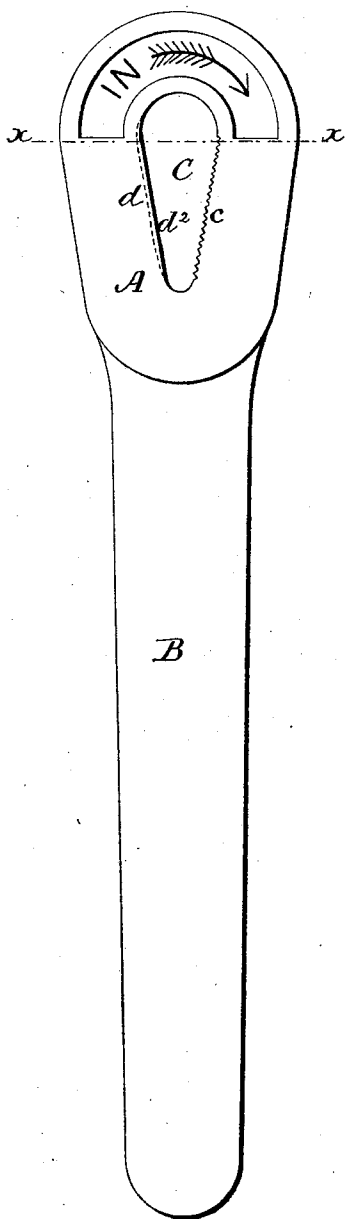


Fig. 2.

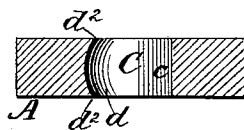
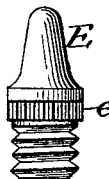


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES W. JOHNSON AND RICHARD WHITAKER, OF NEW BRUNSWICK, NEW JERSEY, ASSIGNORS TO THE NEVERSLIP MANUFACTURING COMPANY, OF SAME PLACE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 588,438, dated August 17, 1897.

Application filed April 7, 1897. Serial No. 631,133. (No model.)

To all whom it may concern:

Be it known that we, JAMES W. JOHNSON and RICHARD WHITAKER, citizens of the United States, residing at New Brunswick, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to wrenches having rigid jaws.

The objects of our invention are to provide a simple and inexpensive wrench possessing great strength, intended to rotate objects of substantially cylindrical form in either one of opposite directions, and is intended mainly to secure calks into horseshoes or to remove them therefrom. We attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a top view of a wrench constructed in accordance with our invention. Fig. 2 is a transverse section of the same on line *xx* of Fig. 1. Fig. 3 is a side view of a horseshoe-calk upon which the wrench is particularly well adapted to operate.

The wrench consists of a tapering piece of steel, the widest part constituting the head A and the narrow part B the handle. These parts are integral, but the head is also made thicker than the handle. Within the head there is formed a tapering slot C, having its narrow end toward the handle, and consequently its wider end at a farther distance from the handle. This arrangement of the tapering slot relatively to the handle produces better results than if the wider portion of the slot was toward the handle. The reason is that as large rods or pipes generally require greater force to rotate them they will occupy within the slot a position farther from the outer end of the handle, and the operator will thus obtain greater leverage and consequently greater power. The closing of the slot at its outer end greatly increases the strength of the wrench. The inner surface of one side of the slot is provided with transverse serrations *c* to engage with the surface

of the body intended to be rotated. The inner surface of the opposite side of the slot has a segmental concavity *d* lengthwise thereof, that thereby provides two acute edges *d*² opposite the serrations *c*.

It is evident that if the serrations are pressed with sufficient force against an object placed within the slot they will form slight indentations in the surface of said object, and said indentations greatly increase the adherence of said parts, and the indentations thus made should, if possible, not be mashed flat again by the opposite face of the slot while the wrench is made to take a new grip upon the object, and this desideratum is accomplished by the concavity *d*. This advantage is particularly useful to apply or to remove horseshoe-calks, as shown at E in Fig. 3, that have a portion of their periphery milled at *e* or provided with fine serrations corresponding with the serrations *c* in the wrench.

As a person applying calks to horseshoes generally stands with head and neck bent on a level with his knees, or, as sometimes said, "stands on his head," on one side of the head of the wrench is stamped an arrow with the word "In," to indicate the direction of rotation to drive a calk in its hole in the shoe, and on the opposite side (not shown in the drawings) another arrow pointing in the opposite direction with the word "Out" alongside thereof.

Having now fully described our invention, we claim—

A wrench having a head A and handle B integral therewith, said head having a tapering slot, the small end of which is toward the handle, one side of said slot having serrations, and the other side a segmental cavity lengthwise thereof substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES W. JOHNSON.
RICHARD WHITAKER.

Witnesses:

FRED B. KILMER,
GEO. McCORMICK.