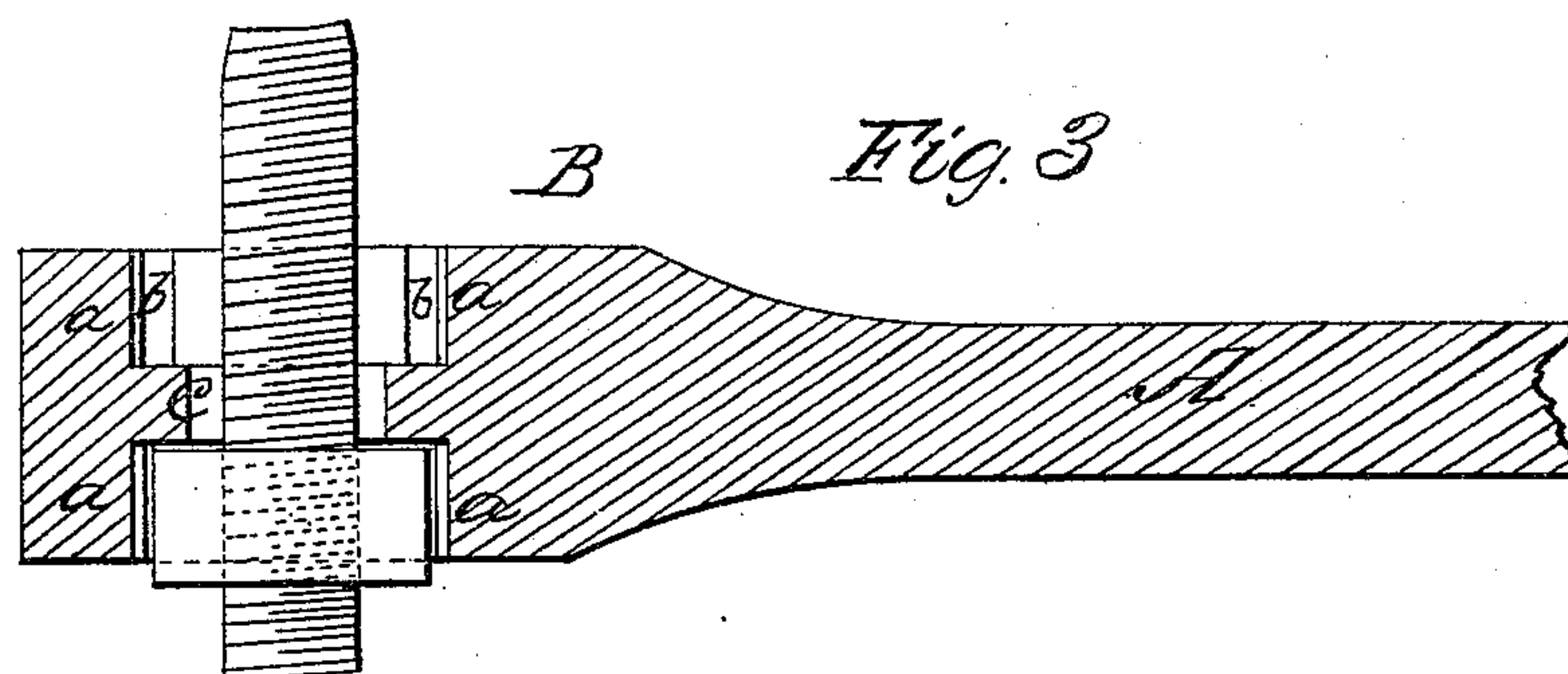
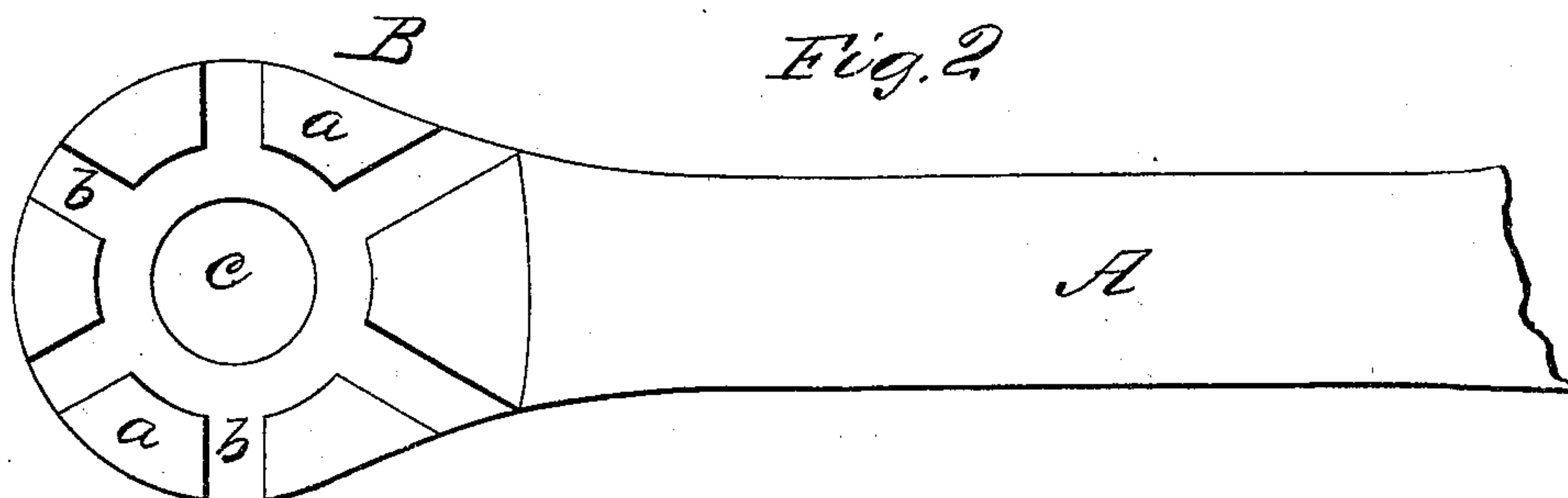
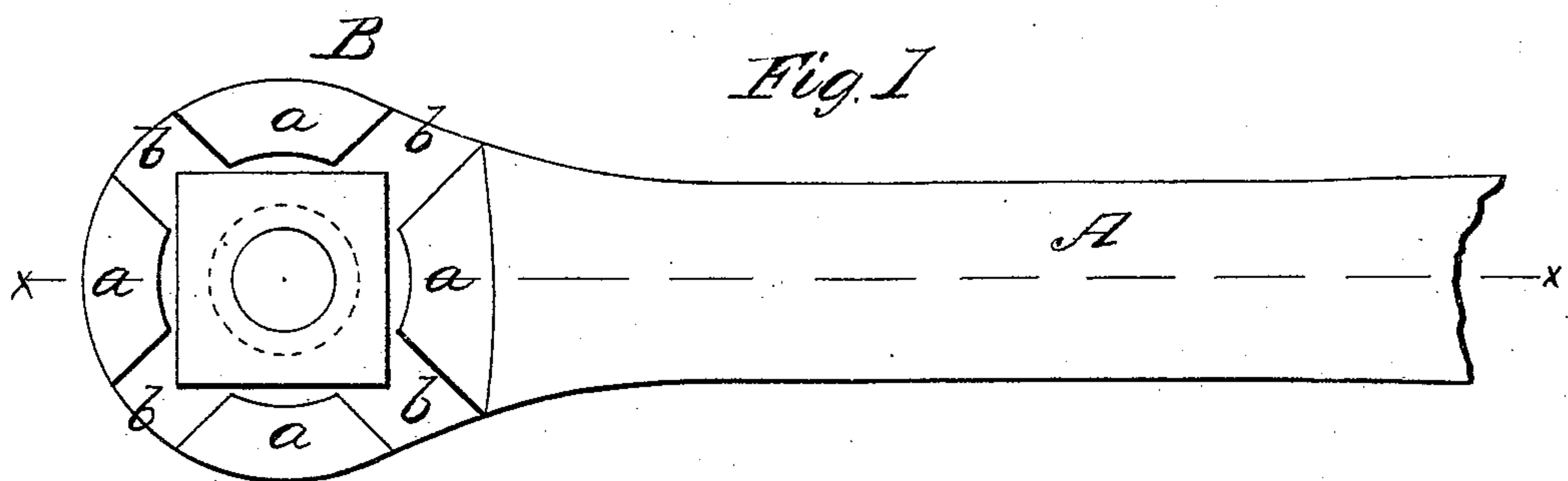


W. P. UHLINGER & P. J. HOFFLIGER.

Wrenches.

No. 151,635.

Patented June 2, 1874.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM P. UHLINGER AND PHILIP J. HOFFLIGER, OF PHILADELPHIA, PA.

IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. **151,635**, dated June 21, 1874; application filed March 2, 1874.

To all whom it may concern:

Be it known that we, WILLIAM P. UHLINGER and PHILIP J. HOFFLIGER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and valuable Improvement in Wrenches; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figures 1 and 2 of the drawing are representations of plan views of our wrench, and Fig. 3 is a sectional view of the same.

This invention has relation to wrenches which are designed for screwing up and unscrewing nuts of angular shape. The nature of our invention consists in a wrench which presents on one or both sides of its head bearing-lugs, which are separated from each other by spaces, into which the angles or corners of the nuts are received, thereby preventing abrasion, indentation, or other injury to said angles or corners during the act of screwing up or unscrewing the nuts.

In the annexed drawings, Figure 1, A designates the handle of our nut-wrench, and B a circular head which is formed thereon. On one side of the head B are four segment-shaped lugs, *a a a a*, between which spaces *b* are left. The inner bearing portion of each lug *a* has one or more points of contact with the side of the nut, but the corners or angles of the nut are not impinged on by said lugs. We thus prevent abrasion of the nuts while using the wrench.

When nuts are to be screwed some distance on bolts or rods, it is necessary to make a hole, *c*, through the center of the head B for the passage of the ends of the bolts, which

hole should be larger than the largest-sized bolt on which it may be desired to apply a nut.

We also contemplate forming lugs *a* on both sides of the head B, as shown by Fig. 3; and when we do this, the lugs on one side of this head may be adapted for a square nut, and those on the other side of the head may be adapted for a hexagonal or an octagonal nut, the spaces between the lugs in all cases corresponding in number to the number of corners which the nuts present.

It will be seen from the above description that the wrench with lugs on both sides of its head, or only on one side thereof, can be made entire of cast metal; and that in the act of screwing up or unscrewing a nut, the lugs *a* bear on all sides of it without impinging on its corners; hence the nut will not be defaced while using the wrench on it. We thus have a wrench with which great power can be applied to a nut, as each side of it will be acted on by a lug.

It will be obvious from the above description that our improvement is applicable to wrenches for screw-bolts, and also to stem-wrenches, and wrenches of other kinds.

What we claim as new, and desire to secure by Letters Patent, is—

A wrench having a head, B, which is constructed with lugs *a* on one or both sides, separated by radial grooves to receive the corners of the nut, substantially as described.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

WILLIAM P. UHLINGER.
PHILIP J. HOFFLIGER.

Witnesses:

WM. NEILL,
H. DIENELL.