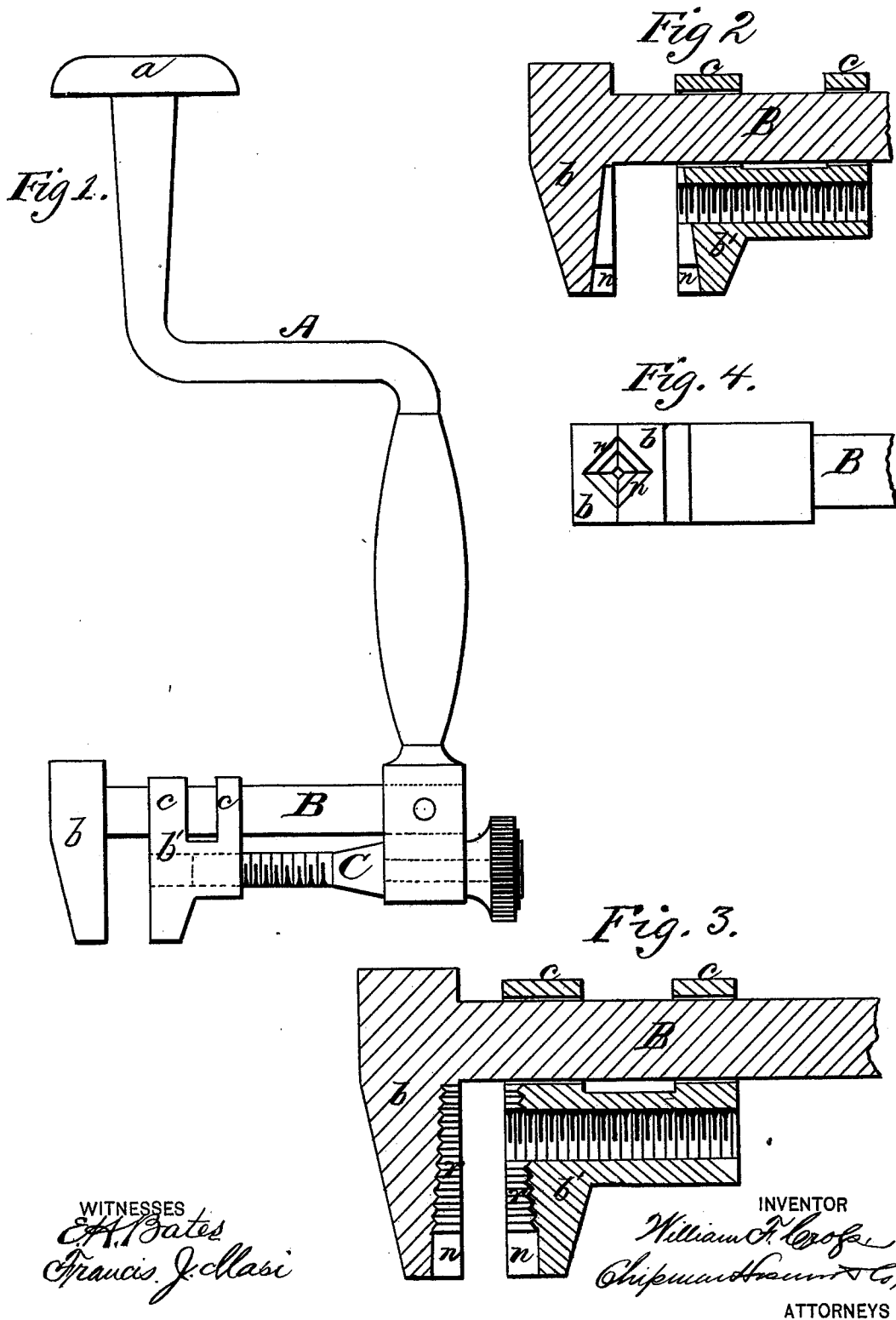


W. F. CROSS.
WRENCH AND BIT STOCK.

No. 175,272.

Patented March 28, 1876.



WITNESSES
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WILLIAM F. CROSS, OF RED WING, MINNESOTA.

IMPROVEMENT IN WRENCHES AND BIT-STOCKS.

Specification forming part of Letters Patent No. **175,272**, dated March 28, 1876; application filed July 10, 1875.

To all whom it may concern :

Be it known that I, WILLIAM F. CROSS, of Red Wing, in the county of Goodhue and State of Minnesota, have invented a new and valuable improvement in Brace-Wrenches; and I 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.

Figure 1 of the drawings is a representation of a plan view of my brace-wrench; and Figs. 2 and 3 are sectional detail views of the same. Fig. 4 is a detail view thereof.

This invention has relation to improvements in brace-wrenches; and it consists in the novel arrangement and construction of the jaw-shank, brace-arm, movable jaw, and operating-screw, all as hereinafter shown and described.

In the accompanying drawings, the letter A represents the brace-arm or handle of my wrench, which is provided at the top with a flat rotating button, *a*, upon which the pressure is exerted, and is curved about midway into the form resembling the letter D, to afford convenient grasp to the hand. To this arm is rigidly attached, in a position vertical to handle A, and at its lower end, a wrench-bar, B, upon the outer end of which is secured the fixed jaw *b*, the inner side of which is serrated or notched for a purpose hereinafter shown and described. On this bar is applied the movable jaw *b'*, which is also serrated and is attached to the said bar by means of loops *c c*, fitting snugly thereto. Immediately behind this jaw, and rotating in the outer end of brace-arm A, is arranged a thumb-screw, C, which works in combination with the jaw *b'*, enabling it to be regulated, by which means any size of nut may be clasped.

By this means a most reliable and effective wrench is produced for the purpose of removing or applying a nut upon a bolt. It is also adapted, by means of the angular longitudinal grooves, to gripe and hold the end of a boring-bit when it is inserted between the ends of the fixed and movable jaws and the set-screw properly manipulated. By this slight modification, which in no way impairs the strength or efficiency of the wrench, it is converted into a second tool or implement of almost universal adaptation for boring purposes. An examination of Fig. 3 will show that the lower end of each jaw is provided with an angular notch, *n*, forming a rectangular recess when the two jaws are brought together. This recess is designed to receive the nut, while the serrations *r* above are designed to seize upon and hold the end of a bit, a screw-driver, or the like.

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

1. In a wrench, the jaws *b b'*, provided with the serrations *r r* and notches *n n*, as and for the purpose set forth.

2. The combination, with the brace-arm A, shank B, and adjusting-screw C, of the fixed jaw *b* and the movable jaw *b'*, operated by the said screw, each having an angular notch, *n*, and transverse corrugations *r*, whereby the wrench is adapted to be used as a brace for boring purposes, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM F. CROSS.

Witnesses:

HERMAN BETCHER,
WM. C. CHILD.