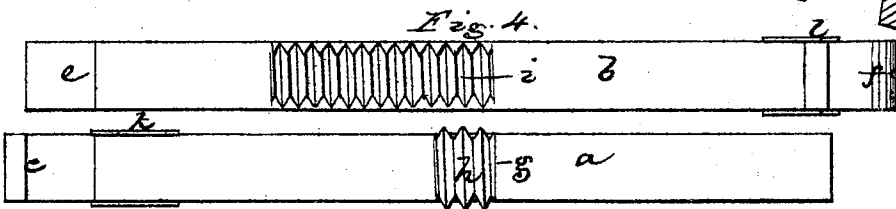
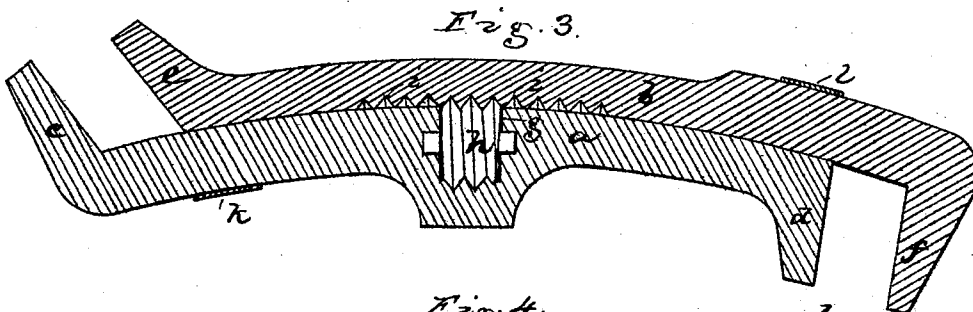
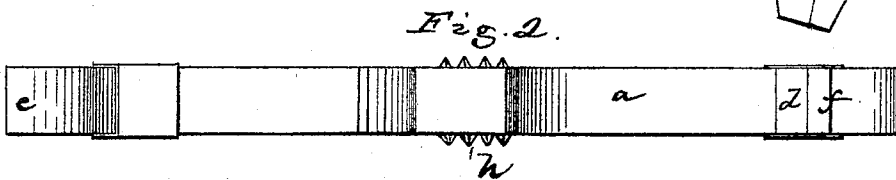
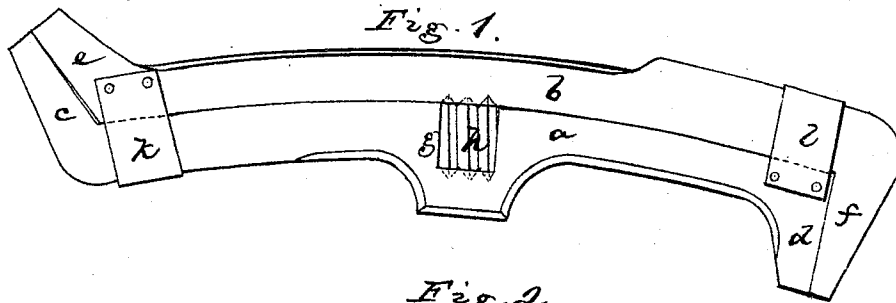


M. G. CRANE.
Wrenches.

No. 141,767.

Patented August 12, 1873.



Witnesses.
M. W. Frothingham.
L. H. Leatimer.

Inventor.
Moses G. Crane.
By his Atty.
Vosky & Gould.

UNITED STATES PATENT OFFICE.

MOSES G. CRANE, OF NEWTON, MASSACHUSETTS.

IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. **141,767**, dated August 12, 1873; application filed March 24, 1873.

To all whom it may concern:

Be it known that I, MOSES G. CRANE, of Newton, in the county of Middlesex and State of Massachusetts, have invented an Improved Screw-Wrench; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates to the construction of a screw-wrench having jaws at opposite ends. In my invention I use two metal bars, with inner faces fitting to each other and curved in the arc of a circle, each bar having extending from one end an angular projection for the inner jaw of one pair of jaws, and from its opposite end and on the opposite side of the bar the outer jaw of the other pair of jaws, these bars being connected by two straps, one extending from one bar around the other bar, and the other extending from the said other bar around the first, each bar sliding through the strap of the other bar, and the relative movement of the bars to open or close the jaws being effected by a screw pivoted in one turning against a screw-thread in the inner face of the other. My invention consists in a wrench having this general construction.

The drawing represents a wrench embodying the invention.

Figure 1 shows the wrench in side view. Fig. 2 is an edge view of it. Fig. 3 is a section showing the jaws open. Fig. 4 shows the inner faces of the two bars.

a b denote the two bars, having inner faces fitting to each other. At one end of the bar *a* is the outer jaw *c*, and at its opposite end is an inner jaw, *d*. At one end of the bar *b* is the jaw *e*, which acts with the jaw *c*, and at the opposite end of said bar *b* is the jaw *f*, which acts with the jaw *d*. The bar *a* is made with a slot, *g*, at its center, in which slot is a screw, *h*, this screw having axial pivots extending into the bar at opposite ends of the

slot. The threads of the screw extend into a screw-thread, *i*, formed in the inner face of the bar *b*, and the threads of the screw *h* project beyond the opposite side faces of the bar, so that the screw can be readily rotated by hand, its rotation effecting the slide-movement of the bar *b* against the bar *a*. At or near one end of the bar *a* a strap, *k*, extends from the bar around the other bar *b*, and from the opposite end of the bar *b* a strap, *l*, extends around the bar *a*, each strap embracing the other bar and forming a guide for its slide-movement and a tie for holding it in position. In the construction shown in the drawing the jaws *d f* extend right-angularly from the bars *a b*, and the jaws *c e* at obtuse angles from the bars, and the bars are curved, so that the bars sliding upon the arc of the circle open the angling jaws *c e* the same extent that the jaws *d f* are opened by the same movement of the bars, the angling jaws and the right-angular jaws thereby fitting to the same nut; and they may be made so that when the jaws of one pair are closed the other jaws are left open.

In making wrenches embodying my construction I prefer to form the bars as malleable-iron castings, and the straps of steel. The wrench thus made is very cheap and very simple, and forms a very effective tool, more readily operated than any wrench now in use, having movable jaws at each end of the bars.

I claim—

The wrench constructed as described—that is, with its two bars *a b* curved in the arc of a circle and arranged to slide upon each other throughout their entire inner curves, each having a right-angled and an obtuse-angled jaw, the two being held together by straps and operated by a screw-thread in the inner face of one and by screw pivoted in the body of the other.

MOSES G. CRANE.

Witnesses:

FRANCIS GOULD,
M. W. FROTHINGHAM.