I. W. HEYSINGER.

Wrench.

No. 164,453. Patented June 15, 1875.

FIG 1.

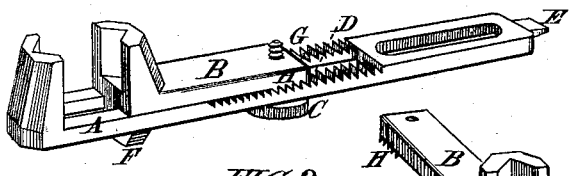
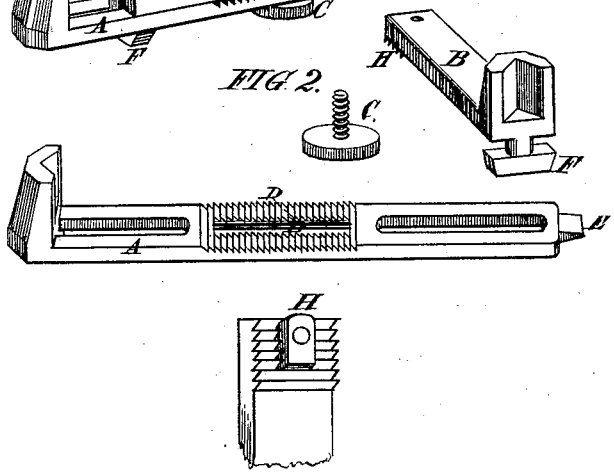


FIG 2.



Witnesses.
L. Lesieur Jr.
Oliver R Leech

Inventor.
J W Heysinger
By A.M. Stout
his Attorney

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

ISAAC W. HEYSINGER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. **164,453**, dated June 15, 1875; application filed August 26, 1874.

To all whom it may concern:

Be it known that I, ISAAC W. HEYSINGER, of Philadelphia, county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Slide-Wrenches, of which the following is a specification:

My invention relates to the construction, arrangement, and combination of parts of an improved wrench which is especially adapted to use upon carriages and agricultural machines, and it will herein be more fully described with reference to the accompanying drawings, in which—

Figure 1 represents a perspective view of the wrench complete, and Fig. 2 a like view of the several parts in detail.

The entire implement, with the exception of the bending-screw C, consists of only two parts, viz., the wrench-bar A and the sliding bar B, which may be cast of any suitable metal.

A is a flat bar, bearing upon one end a jaw provided with a right-angled recess therein, as shown, and upon the other end a screw-driver, E, and it is divided into three parts by three longitudinal slots therein. This bar may be made stronger by being made with ribs or flanges extending down from each side edge, so as to make the under side concave. Its jaw may be made to stand perpendicular to its face, as shown in the drawings, or it may be made to extend laterally therefrom and form what is called a "flat wrench." The slot next the screw-driver is made merely to save metal and secure lightness, the central one to furnish a way for the stem of the screw C and the lug H on the sliding bar B to travel back and forth in, and the one next the fixed jaw to furnish a way for the button F and its neck to pass through, and the next to travel back and forth in when the jaws of the implement are adjusted in use. The central portion of the bar is provided with teeth on each side of the slot D, and these teeth are so pitched that the teeth with which the sliding bar B is provided will slide easily over them when the jaw on sliding bar B is moved toward the jaw on A, but will resist and prevent the two jaws being moved asunder, so that when the two bars A and B are held together by screw C the jaws are locked in position, and will hold fast until the rear end of sliding bar B is raised so as to disengage the teeth by means of the screw C. The sliding bar B has under its rear end the lug H, which fills laterally the central slot D, and thus guides the sliding bar B and leaves the stem of screw C free from strain, and that bar has upon the front thereof a jaw recessed in precisely the same manner that the other jaw is. The button F is inserted in its slot or way by turning the sliding bar B at right angles to the main bar, and, when inserted, the former bar is turned back into line with the latter, and it holds the two bars locked together at the point of insertion, but allows bar B free lengthwise motion. The recesses in the jaws before described are provided, in order that the jaws may be inserted into the hub of a wheel, and be made to grasp the nut upon an axle and hold it with more effect and less liability to slip off. This form of jaw adds to its strength, but does not prevent the use of the wrench for general purposes, since the faces of the jaws are made broad and parallel to each other, and the recesses, therefore, do not interfere in any use of the implement.

The slot in the main bar next its jaw may be dispensed with, if deemed desirable, and the sliding bar be made to extend down and partly around the bar A underneath; but I think, in use, the construction shown in the drawings will be found preferable.

The sliding bar B may be also extended, so that the toothed part may come opposite the slot next to E, so that for rapid changes of gage the hand of the operator may keep the parts A and B together without the use of the screw C. The wrench will be equally strong, however, and much lighter in the form shown in the drawings.

The screw has the small end slightly beaten up, so that it may not come out and get lost by carelessness. I also prefer using a flat-milled head upon the lower end of the screw, large enough to extend beyond the edges of

the main bar, so that the screw may be easily run up by the thumb or finger of the same hand which holds the wrench, if desired.

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

1. The combination of the slotted toothed bar A, the movable toothed bar B, provided with the button F, and lug H, and the clamping-screw C, substantially as described.

2. The clamping-screw C, passing through a slot in the main bar A, into the lug H, and the rear portion of the movable bar B, substantially as described.

ISAAC W. HEYSINGER.

Witnesses:
P. O'DONNELL,
OLIVER R. LEECH.