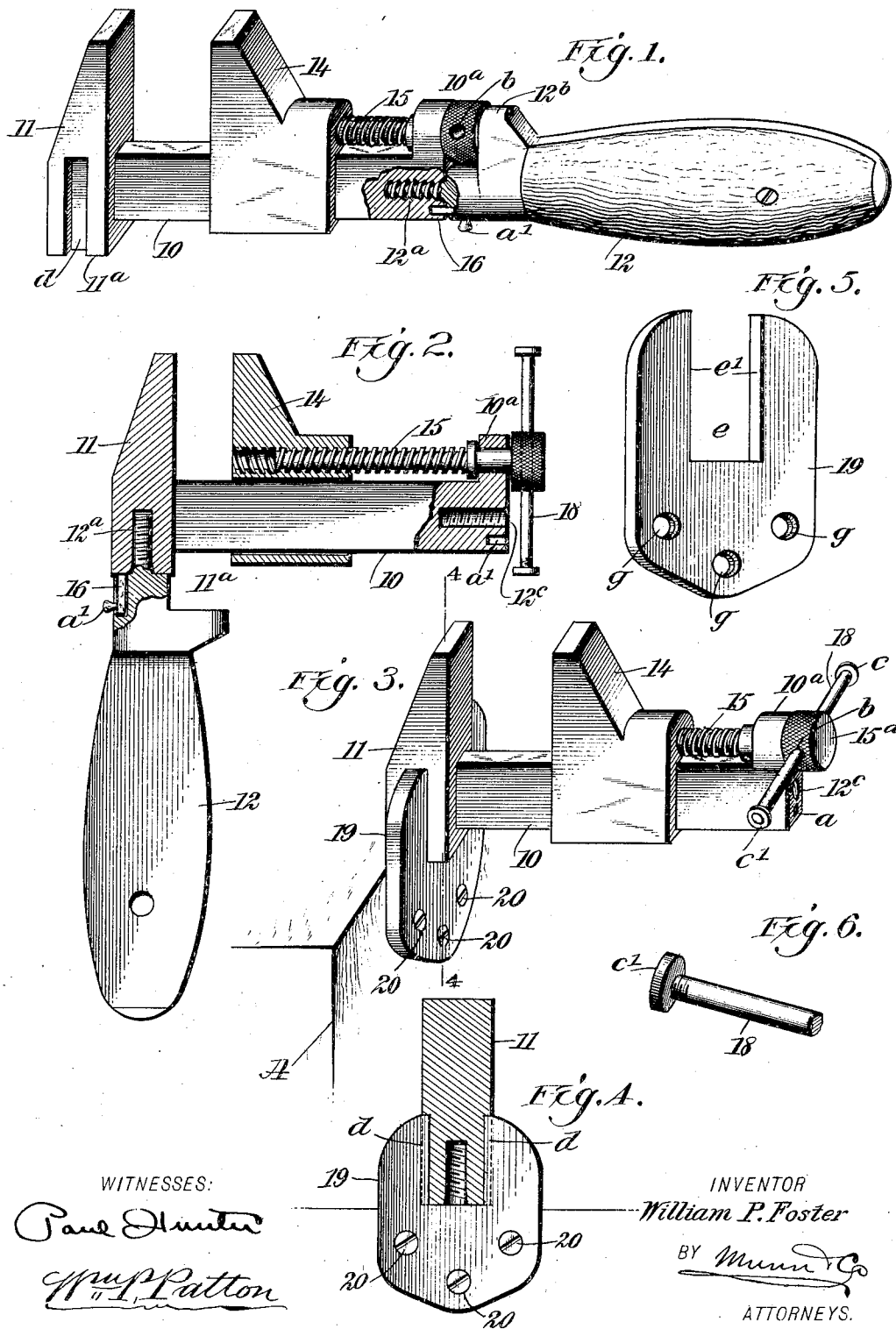


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PATENTED SEPT. 13, 1904.

W. P. FOSTER.
CONVERTIBLE WRENCH AND VISE.
APPLICATION FILED JULY 29, 1903.

NO MODEL.



UNITED STATES PATENT OFFICE.

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CONVERTIBLE WRENCH AND VISE.

SPECIFICATION forming part of Letters Patent No. 770,058, dated September 13, 1904.

Application filed July 29, 1903. Serial No. 167,425. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PHILLIPS FOSTER, a citizen of the United States, and a resident of Jacumba Springs, (Campo P.O.), in the county of San Diego and State of California, have invented a new and Improved Convertible Wrench and Vise, of which the following is a full, clear, and exact description.

This invention has for its object to provide novel details of construction for a wrench of the adjustable-jaw type which enables the quick and convenient conversion of the wrench into a vise either for manual use or as a fixture upon a stable support and also permits the exchange of parts of the implement to again convert it into a sliding-jaw wrench, as occasion may require.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a partly-sectional perspective view of the implement arranged as a sliding-jaw wrench. Fig. 2 is a partly-sectional side view of the combination-tool adjusted to provide a hand-vise adapted to hold work conveniently and permit it to be manually supported. Fig. 3 is a perspective view of the improvement arranged to serve as a stationary vise. Fig. 4 is a transverse sectional view substantially on the line 4-4 in Fig. 3. Fig. 5 is a perspective view of a bracket-plate employed for converting the implement from a hand-vise into a stationary vise, and Fig. 6 is a perspective view in part of a lever-bar employed.

The sliding-jaw wrench is mainly of the usual construction and essentially comprises the following details.

The lever-bar 10 is provided with a fixed jaw 11 at one end and an attachable handle 12 at the opposite end, said handle having a shouldered screw 12^a, extended centrally from one end thereof and screwed into a threaded longitudinal perforation 12^c, centrally formed in the end of the lever-bar, whereon the handle is thus removably secured.

A sliding jaw 14 is loosely mounted upon the lever-bar 10 and is held for adjustment toward and from the fixed jaw 11 by a screw 15, that loosely engages a perforated boss 10^a, formed or secured on the lever 10 near the abutment-ear 12^b, formed on the handle 12, and whereon the milled head 15^a of the screw 15 loosely bears when the handle is secured upon the lever-bar, as is clearly shown in Fig. 1. It will be seen that the head 15^a of the screw 15 is loosely held between the boss 10^a and ear 12^b, so that the rotation of the head will move the sliding jaw 14 toward or from the fixed jaw 11, as is usual in this type of wrenches.

To conduce to the proper action of the more important details of the wrench, it is preferred to employ the following coacting means: A keeper-bolt 16 is held to slide in the head of the handle 12 and has a loose engagement within a longitudinal perforation opposite a similar perforation *a* in the adjacent end of the lever-bar, a lateral projection *a'* on the keeper-bolt affording means for its manipulation to effect an interlocking insertion of one end of the bolt 16 within the perforation in the lever-bar, which will obviously hold the handle from turning while in use.

In the heel portion 11^a of the fixed jaw 11 a central longitudinal perforation is formed, which is threaded in its side wall for the reception of the shouldered screw 12^a, which when fully inserted therein serves to detachably secure the handle 12 on the fixed jaw and substantially alined therewith. A suitable perforation is formed at a proper point in the heel of the fixed jaw 11 for the reception of the locking end of the keeper-bolt 16, which when engaged within said perforation will prevent the slightest turning movement of the screw 12^a, thus rendering the handle a rigid fixture on the jaw from which it projects.

The milled head 15^a on the adjusting-screw 15 is transversely perforated, as shown at *b*, and in this perforation a lever-bar 18 is loosely inserted when the implement is arranged for service as a hand-vise, said lever having a fixed head *c* on one end and a removable head *c'* on the opposite end, which latter when detached permits the lever to freely pass through the head 15^a, the replac-

ing of said head *c'* serving to hold the lever therein for use when the jaw 14 is to be adjusted toward or from the fixed jaw 11, thus providing a hand-vise wherein objects of different dimensions may be grasped and held, as is usual in the use of such tools.

As a convenient and preferred means for converting the hand-vise into a vise capable of being readily affixed upon a stationary bunch or the like for holding work a bracket-plate 19 is provided. As shown in Fig. 5, the plate 19 consists of a flat piece of metal having an open slot *e* formed therein and extending from one edge inwardly, the side edges *e'* of the slot being parallel with each other and spaced apart a distance equal to the thickness of the fixed jaw 11 between the bottom surfaces of the recesses or channels *d*, so that these side edges of the bracket-plate may be slid into the channels *d*, that are formed in the sides of the fixed jaws 11 and effect a detachable connection of the bracket-plate with said fixed jaw, as is clearly shown in Figs. 3 and 4, this engagement being effected after the handle 12 is removed. A suitable number of screw-holes *g* is formed in the bracket-plate 19 below the slot *e* therein, and from the relative position of the plate on the jaw 11 said jaw may be held fixed upon the work-bench A by screws 20, inserted into the edge of the bench through the screw-holes *g*.

It will be seen that the attachment of the bracket-plate 19, as described, and its connection with the fixed jaw 11 will project the portion 10 horizontally away from the bench A, thus disposing the jaw 14 upright and permitting it to serve as the adjustable jaw of a stationary vise, the lever 18 and screw 15 affording means for a sliding movement of the jaw

14, as may be desired. It is obvious that by a removal of the lever 18 from the milled and perforated head 15^a and the bracket-plate 19 from the fixed jaw 11 the engagement of the screw extension 12^a within the perforation in the lever-bar 10 will convert the implement into a sliding-jaw wrench.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a convertible wrench or vise, the combination with a lever-bar, and a fixed jaw on one end of the lever-bar, said jaw having a longitudinal threaded perforation extending from its heel end, of a handle having a screw projected centrally from one end thereof and adapted to screw into the perforation in the fixed jaw, thus disposing the lever-bar at one side of the handle and at a right angle thereto.

2. In a convertible wrench and vise, the combination with a lever-bar, a fixed jaw on one end of said bar, having a longitudinal central threaded perforation therein extended from its lower end, a slidable jaw on said bar, an adjusting-screw engaging the slidable jaw and held to rotate on the lever-bar, and a lever engaging a perforated head on the adjusting-screw, of a handle having a projecting screw on one end thereof, adapted to engage the longitudinal threaded perforation in the fixed jaw, thus disposing the lever-bar at a right angle to the axis of the handle, and means for holding the handle from unscrewing.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM PHILLIPS FOSTER.

Witnesses:

B. L. HOLDEN,
JAS. A. HOLDEN.