

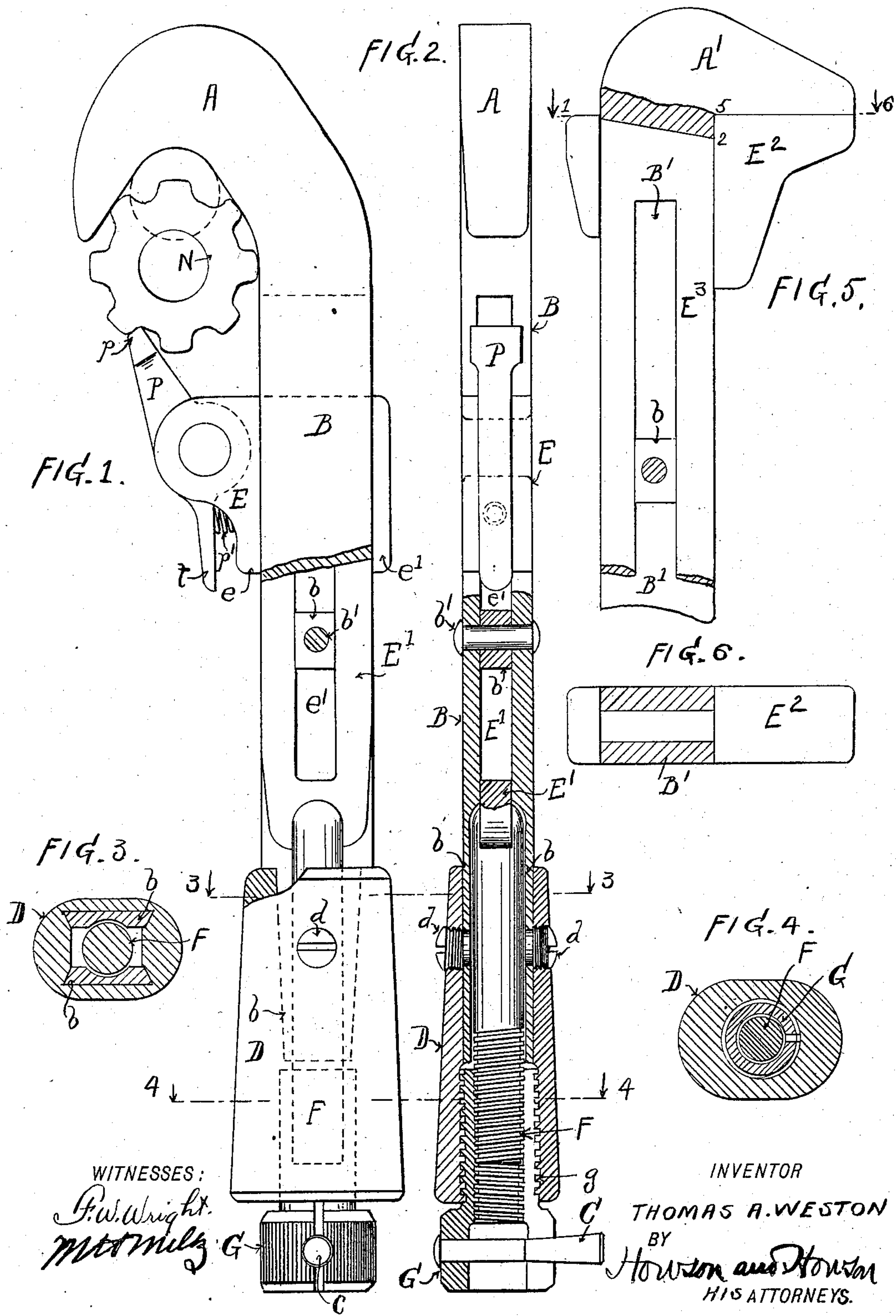
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PATENTED APR. 14, 1903.

T. A. WESTON.
WRENCH.

APPLICATION FILED MAY 9, 1901.

NO MODEL.



UNITED STATES PATENT OFFICE.

THOMAS A. WESTON, OF ARDEN, NORTH CAROLINA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 725,306, dated April 14, 1903.

Application filed May 9, 1901. Serial No. 59,456. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. WESTON, a citizen of the United States of America, residing in Arden, county of Buncombe, in the State of North Carolina, have invented an Improved Wrench, of which the following is a specification.

My invention relates to the construction of wrenches with adjustable jaws; and the main object of my invention is to secure in tools of this class greater strength, greater rigidity in the adjustable parts, and increased facility of operation.

A further object of my invention is to so construct a wrench of this character as that it may operate by vibratory ratchet-lever action nuts, bolt-heads, and other cylindrical rotatory objects which have their peripheries grooved or toothed, so as to fulfil for the time the functions of a toothed ratchet-wheel co-acting with the pawl element of my improved wrench.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of the preferred form of my improved wrench. Fig. 2 is an edge view of the same, also partly in section. Fig. 3 is a sectional view on the line 3 3, Figs. 1 and 2. Fig. 4 is a sectional view on the line 4 4, Figs. 1 and 2. Fig. 5 is a side view, partly in section, of another form of wrench to which certain features of my invention may be applied; and Fig. 6 is a sectional plan on the line 1 2 5 6 in Fig. 5.

The preferred construction shown in Figs. 1 to 4 is of the type of wrench before mentioned, in which the wrench is adapted to act on the toothed nuts, bolts, &c., with vibratory ratchet-lever action by means of a pawl. The hook-shaped head or stationary upper part A is formed upon a bifurcated back or stock B, the lower extremities *b* of which are tapered, Fig. 1, and of dovetailed cross-section, Fig. 3, to fit into corresponding recesses in the handle D, where they are secured by short screws *d*.

The moving jaw or slide E, which carries the pawl P, works in the bifurcation of the stock B and has guide-flanges *e e'*, embracing at the back and front the parallel edges of the stock, so as to slide thereon. This moving jaw has a downward extension or bar E' occupying the space between the bifurcations

or forks of the stock, the said bar ending in a screw-threaded extremity F. At its middle part the bar E' is provided with a longitudinal slot *e'*, in which works a small stationary block *b*, secured to the stock B by a cross-rivet *b'* or otherwise.

The adjusting-nut G is at the back end of the handle D and is threaded internally to receive the threaded end F of the bar E' of the movable jaw. The adjusting-nut G is also threaded externally at *g* to fit corresponding internal threads in the handle D. One of these threads on the nut is right-handed and the other left-handed in order to give a rapid movement to the slide-bar. I prefer to slit this nut G lengthwise on one side, and through this slitted part I pass the conical head of a cross-pin C, whereby the said nut may be expanded when desired, and thus frictionally lock the slide-bar to the handle, and so prevent the movable jaw of the wrench from yielding to shocks or jarring action when in use. In this way I secure rigidity of the adjustable parts of the tool.

To the movable jaw or slide E is pivoted the pawl P, acted on by a push-spring *p'* to tend to throw the nose of the pawl inward, and this nose has its acting end *p* substantially at right angles to a radial line drawn from the pivoting axis of the pawl. A thumb-piece or tail *t* is provided on the pawl, whereby the latter may be lifted from engagement with the toothed periphery of the nut, bolt, or other such object N when removing or applying the wrench. I have indicated in full lines in Fig. 1 a toothed nut N of about as large a diameter as the wrench is constructed to receive, while by the dotted circle I have indicated one of the smallest size.

The mode of operation is simply to place the wrench-head over or around the nut or bolt-head N, then by the thumb-nut G adjust the movable jaw or slide to bring the end of the pawl P into working engagement with the nut-teeth, as shown in Fig. 1. Then to prevent the slide and pawl shaking or working away from the adjusted position the conical pin C may be driven inward by a blow, so as to expand the adjusting-nut and lock it to the handle. The small block *b* limits the extent of movement of the slide-bar; but its principal purpose is to serve as a brace or

distance piece between the forks of the stock B, staying them apart from being bent inward upon the slide-bar and also adding strength and stiffness transversely to the stock. This feature of the wrench and the construction at the handle end, it will be evident, are applicable to various other styles and forms of wrenches with adjustable jaws. For the sake of illustration I have shown in Figs. 5 and 6 one form of wrench to which these features of improvement are applicable, A' being the fixed jaw upon the bifurcated stock B', while E² is the movable jaw on the slide-bar E³, which is slotted to work over the brace-piece b.

I claim as my invention—

1. A wrench having a handle and fixed and movable jaws with a right and left handed adjusting-nut to actuate the movable jaw, said nut being provided with means to lock it in adjusted position.

2. A wrench having a handle and fixed and movable jaws with a split adjusting-nut in the handle to actuate the movable jaw, said nut having a conical pin to expand the nut and lock it in adjusted position.

3. A wrench having a handle, fixed and movable jaws, a bifurcated stock carrying one of said jaws and handle, and embracing the other jaw, and a right and left handed adjusting-nut for the movable jaw at the back end of the handle.

4. A wrench having a handle, a fixed jaw, a bifurcated stock carrying said jaw and handle, a movable jaw having a threaded extension guided in the stock and a right and left handed adjusting-nut for the movable jaw at the back end of the handle.

5. A wrench having a handle, a fixed jaw, a bifurcated stock carrying said jaw and handle, a movable jaw having a slotted extension guided between the bifurcations in said stock and a stay-piece lying in the said slot and rigidly connecting the bifurcations of the stock, substantially as described.

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

THOMAS A. WESTON.

Witnesses:

F. WARREN WRIGHT,
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