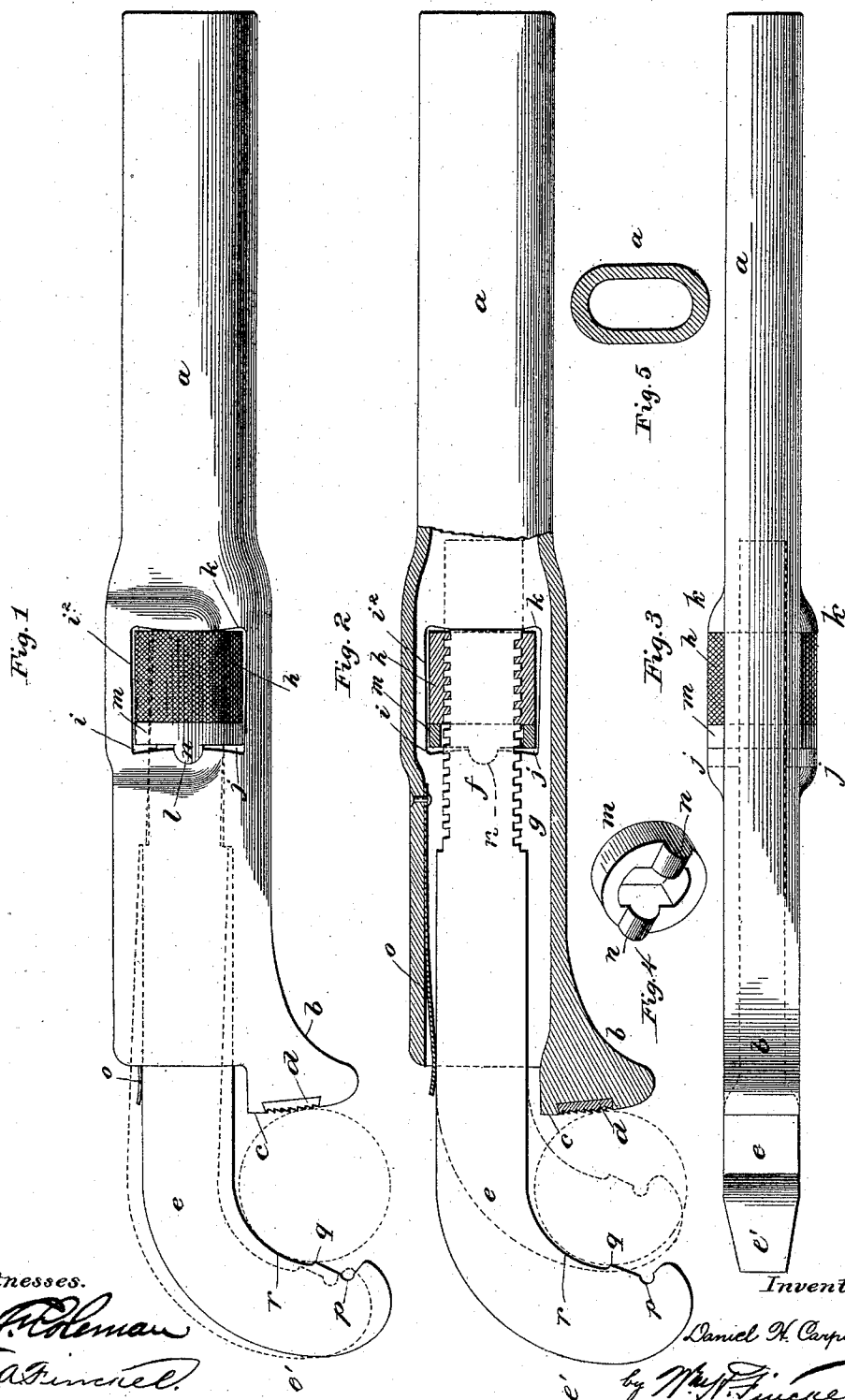


(No Model.)

D. H. CARPENTER.
WRENCH.

No. 487,087.

Patented Nov. 29, 1892.



Witnesses.

J. P. Coleman
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UNITED STATES PATENT OFFICE.

DANIEL H. CARPENTER, OF ORLANDO, FLORIDA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 487,087, dated November 29, 1892.

Application filed June 28, 1892. Serial No. 438,306. (No model.)

To all whom it may concern:

Be it known that I, DANIEL H. CARPENTER, a citizen of the United States, residing at Orlando, in the county of Orange and State of Florida, have invented a certain new and useful Improvement in Wrenches, of which the following is a full, clear, and exact description.

The invention relates to that class of wrenches in which a longitudinally-adjustable and vibrating or oscillating jaw is employed; and the invention consists of peculiar means for effecting these longitudinal and vibratory or oscillating movements in nut-wrenches, pipe-wrenches, or combined nut and pipe wrenches.

Having thus stated the principle of my invention, I will proceed now to set forth the best mode in which I have contemplated applying that principle, and will then particularly point out and distinctly claim the part or improvement which I claim as my invention.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation, showing by full and dotted lines the vibratory or rocking movement of the movable jaw. Fig. 2 is a partial longitudinal section, showing in full and dotted lines the longitudinal adjustment of the movable jaw. Fig. 3 is a front elevation. Fig. 4 is a perspective view of the rocking collar, and Fig. 5 is a transverse section of the handle.

In the preferred form of my invention I make the handle or handle-socket *a* and stationary jaw *b* in one piece and by casting or other process. The active surface *c* of the stationary jaw is curved eccentrically with relation to the movable jaw and may be den-
tated or roughened in any manner; but I prefer to provide said jaw with a removable and renewable dentated portion *d*. The movable jaw *e* is provided with a screw-threaded shank *f*, which is fitted to be moved in the socket *g* thereof in the handle, and the mouth of this socket is made considerably longer than the greatest width of the movable jaw's shank from front to back. The screw-threaded shank is engaged by a milled nut *h*, which is arranged in a transverse socket *i* in the stationary part of the wrench, and the opposite

end walls *j* and *k* of this socket are curved or projected toward one another at their center lines and are thickened laterally, as clearly shown by the shading in Figs. 1 and 3, in order to afford extended bearing-surfaces for the nut. Moreover, the curved and laterally-thickened walls *j* are made with curvilinear recesses *l*, arranged in the longitudinal center line of the two jaws. Between the nut and the walls *j* is interposed a collar *m*, having parallel faces and a central opening of the cross-sectional outline of the shank *f*, as clearly shown in Fig. 4, and on one face of this collar I provide opposite lugs *n*, curved to conform to the recesses *l* and adapted to fit and move in said recesses. It is obvious that the faces of the collar need not be parallel, and indeed it is within my invention to make the lower ends of the walls *j* straight and the upper face of collar *m* inclined in opposite directions from the center, still preserving, however, the pivotal connection of the collar and walls and providing for the rocking motion. The gist of my invention in this regard is in securing a pivotal action for the jaw without using a pivot-pin and arranging such pivot in the line of a central draft, and so relieving the threads of the shank of the pry that falls there in prior constructions. The opposite face of the collar *m* fits squarely to the nut and affords a bearing for said nut, so that the thrust and strain on the movable jaw is placed upon the nut and by it transferred to the rocking collar, and by the latter placed upon the handle or stationary part of the wrench, thus making of the nut merely a holding device to retain the movable jaw in adjusted position and removing the strain to the solid metal of the stationary part of the wrench. The end walls *j* and *k* of the socket *i* merge into the side walls *i*² on curved lines, and these side walls *i*² diverge from the plane of the walls *j*, so as to provide the necessary clearance for the rocking nut.

A flat or other spring *o* is applied to the movable jaw and tends to throw it forward, while at the same time permitting it to yield backwardly to facilitate the application of the wrench to its work, its removal therefrom, and the ratcheting of the wrench about its work to get a fresh hold without removing it,

and for this last purpose the provision of the rocking collar and nut add greatly to the efficiency of the wrench.

The active end e' of the movable jaw is in the form of a curved hook, having the transverse curvilinear notch p to receive the angle or corner without biting the edge of nuts and the tooth q to grip the surface of a pipe, all substantially as in my patent, No. 467,151, dated January 19, 1892; but the portion r may be smooth without impairing its efficiency.

It will be observed that the movable jaw works on the rocking nut as on a pivot and that owing to the arrangement and location of the pivot the strain and thrust are in right lines and in the lines of greatest resistance instead of laterally or to one side—that is to say, the draft is central.

Obviously my invention of the rocking medium is applicable to wrenches having other forms of stationary and movable jaws than those herein shown and described, and I wish to be understood as including them within this invention.

What I claim is—

1. A wrench having a rocking and longitudinally-movable jaw, combined with a sta-

tionary portion having a socket of greater length from front to back than the shank of the movable jaw, a collar pivoted in said stationary portion and in the center line of the said jaw on oppositely-disposed pivots, and a nut applied to said jaw and bearing against said collar, substantially as described.

2. A wrench having a rocking and longitudinally-movable jaw and a stationary portion having a transverse socket whose end walls are projected centrally toward one another and are thickened laterally and also having a longitudinal socket of greater length from front to back than the shank of the movable jaw, combined with a collar pivoted in the outer end walls upon oppositely-disposed pivots, and a nut butting at one end against the collar and at the other against the inner end walls and engaging the movable jaw, substantially as described.

In testimony whereof I have hereunto set my hand this 24th day of June, A. D. 1892.

DANIEL H. CARPENTER.

Witnesses:

EDWIN A. FINCKEL,
JOHN C. EDWARDS.