E. A. LELAND.

RATCHET WRENCH.

No. 187,288. Patented Feb. 13, 1877.

Fig. 1.

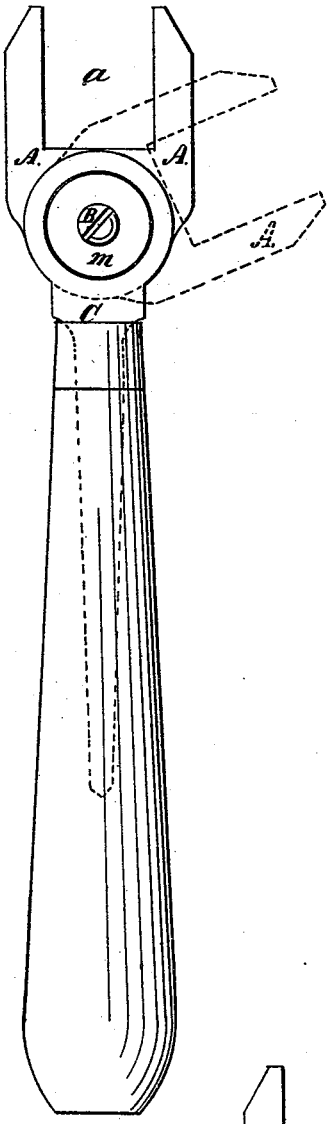


Fig. 2.

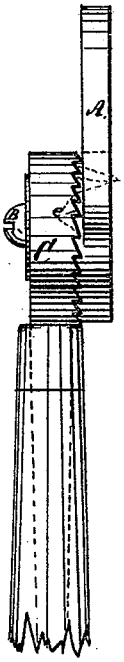


Fig. 3.

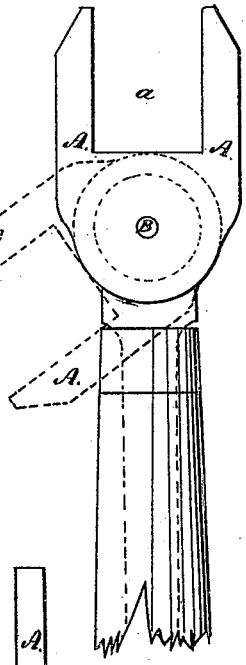


Fig. 4.

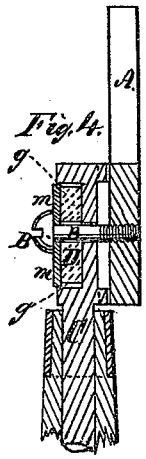
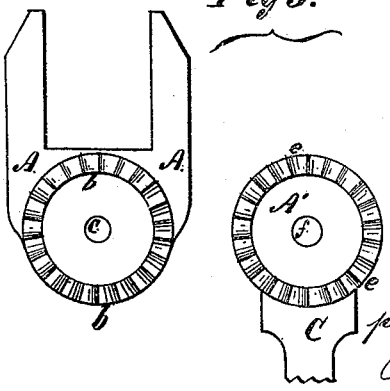


Fig 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWIN A. LELAND, OF NEW YORK, ASSIGNOR TO LEONARD RICHARDSON, OF BROOKLYN, N. Y.

IMPROVEMENT IN RATCHET-WRENCHES.

Specification forming part of Letters Patent No. 187,288, dated February 13, 1877; application filed September 26, 1876.

To all whom it may concern:

Be it known that I, EDWIN A. LELAND, of the city, county, and State of New York, have invented an Improvement in Ratchet-Wrenches, of which the following is a specification:

This invention comprises a novel combination of a jaw, constructed with an annular system of ratchet-teeth; a handle or lever, constructed with a ratchet-disk having a similar system of teeth; a pivot connecting the two parts just mentioned; and a spring so provided as to press the two systems of ratchet-teeth in contact with each other, the several parts being arranged in such relation with each other as to provide a simple, cheap, strong, and compact ratchet-wrench, which may be used with very great convenience under circumstances where the employment of the ordinary wrench is inadmissible.

Figure 1 is a plan or top view of a wrench made according to my invention. Fig. 2 is an edge view of the same. Fig. 3 is an inverted plan view of the same. Fig. 4 is a longitudinal section of the same; and Fig. 5 represents the inner surface of the jaw and lever with their respective systems of ratchet-teeth detached or separated from each other.

A is the jaw, the recess *a* of which, designed to receive the head of the nut or bolt to be turned by the wrench, may be of square or other suitable form. On the inner end of this jaw is provided the annular series or system of ratchet-teeth *b*, more fully represented in Figs. 2 and 5, said system being concentric with the hole *c*, into which the pivot B is screwed, as hereinafter explained. C is the lever or handle of the implement, having at its inner end the disk A′, upon which is formed the annular system of ratchet-teeth *e*, concentric with the hole *f*, through which the aforesaid pivot B is passed in the attachment of the jaw to the handle. This system of ratchet-teeth *e* is coincident in size and contour with the system *b* of the jaw A, except that the teeth slope in opposite directions. The outer side of the disk A′ is chambered or recessed, as represented at *g* in Fig. 4, and in this is placed a spring, D, which is preferably formed of a disk of india-rubber, fitted into the chamber *g*, just described. Upon the outer side of this spring D is preferably placed a washer, *n*. The system *e* of ratchet-teeth of the lever C is placed upon the coincident system *b* of the jaw A, and the pivot B, being passed through the hole *f* of the jaw A, is screwed into the internally-threaded hole *c* of the lever C, thereby compressing the spring D, and bringing the two systems *b e* of ratchet-teeth in contact with each other, the spring permitting the ratchet-teeth of the lever C to slip back over those of the jaw A, when the lever is turned in one direction, in order to enable the lever to recover its hold upon the jaw preliminary to a partial turning of the latter; the ratchet-teeth of the two systems, of course, holding together to cause the jaw to be turned with the lever when the latter is turned in a direction opposite to that just hereinbefore indicated. By this means a to-and-fro movement of the lever C causes an intermittent rotatory movement to be given to the jaw A, and thereby enables the nut or head of the bolt, to which said jaw may be applied, to be turned without removing the jaw A therefrom, under circumstances where a continuous rotatory movement of the lever is impossible. Furthermore, the jaw A being offset or placed at one side of the lever, the jaws may be applied to a nut or bolt-head under conditions where the application of the jaws of an ordinary wrench would be out of the question.

It is, of course, to be understood that, with the varied movement of the lever C, the position of the jaw A may be at any required angle to the handle, as indicated in dotted lines in Figs. 1 and 3.

What I claim as my invention is—

The ratchet-wrench comprising the jaw A, having the annular system of ratchet-teeth *b*, the handle or lever C, having the disk A′ formed with the system of ratchet-teeth *e*, the pivot B, and the spring D, all arranged for use and operation, substantially in the manner set forth, for the purpose specified.

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Witnesses:

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