(No Model.)

L. COES.

WRENCH.

No. 301,681. Patented July 8, 1884.

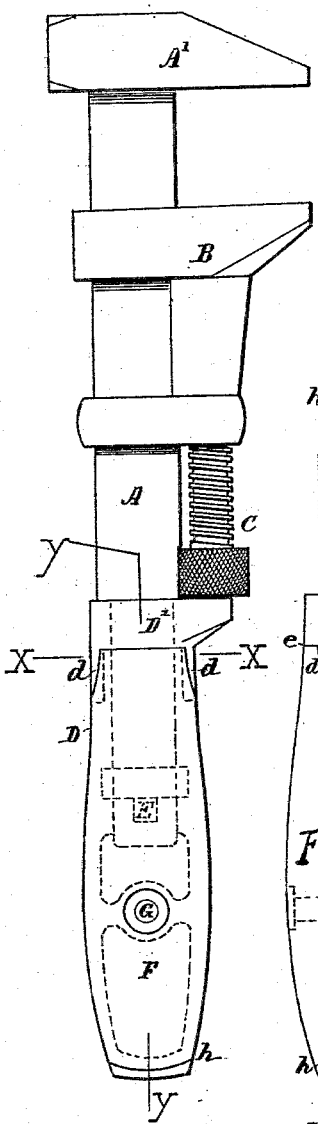

Fig. 1

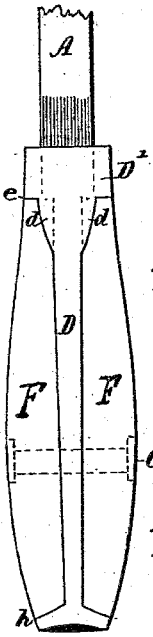

Fig. 2

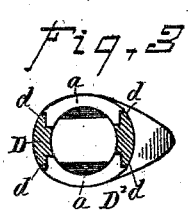

Fig. 3

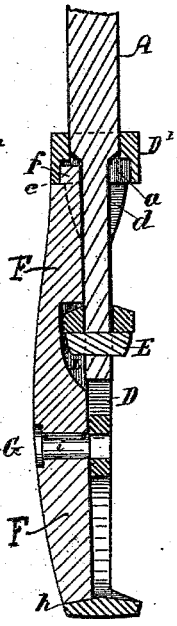

Fig. 4

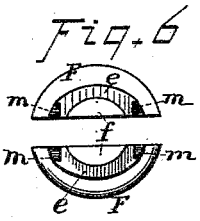

Fig. 6

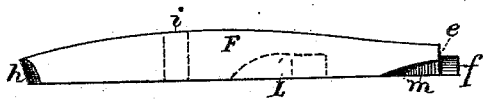

Fig. 7

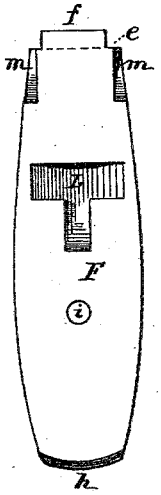

Fig. 5

Witnesses—
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UNITED STATES PATENT OFFICE.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 301,681, dated July 8, 1884.

Application filed April 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, LORING COES, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Wrenches; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to an improvement in the construction of that class of wrenches described in my Letters Patent No. 229,673, the objects of this invention being to strengthen the neck of the handle and to afford a simple and secure means of attaching the wood or side plate to the metal frame.

The particular subject-matter claimed is hereinafter definitely specified.

In the drawings, Figure 1 is a side view of a wrench embracing my improvements. Fig. 2 is a back view of the handle and a portion of the bar. Fig. 3 is a transverse section of the handle-frame at the position of line *x x*. Fig. 4 is a longitudinal section at the position of line *y y*, with one of the side plates removed. Fig. 5 is an inner face view of one of the side plates. Fig. 6 is a top end view of the side plates, and Fig. 7 is an edge view of one of said plates.

In referring to parts, A designates the bar carrying the head A′. B is the movable jaw, C the rosette and adjusting-screw, and D the handle-frame, within which the shank of the bar is firmly fitted and secured by the pin or key E in a manner substantially similar to that described in my Letters Patent above named.

The form of the handle-frame is indicated in Fig. 1 by dotted lines. In my present improvements the handle-frame D is furnished with lips or flanges *d d*, located, as shown, within the angles below the neck or ferrule portion D′ along the outer edges of the frame-bars. Said lips *d* are rigid or integral with the frame D, and serve as braces for strengthening the frame at that position, and also as guards for retaining and protecting the wood or side plates, F. The ferrule or neck portion D′ is undercut or recessed at *a* for the reception of the neck *f* of the side plates of the handle.

The wood side plates or scales, F, are made as indicated, the top end being provided with a segmental extension, *f*, and shoulder *e*, to respectively fit into and against the ferrule portion D′ of the frame D, and with longitudinal grooves or recesses *m m*, that fit inside the lips *d d*, whereby the ends of said plates are securely held to the frame and confined against upward or lateral movement. The bearing-surface at the heel end *h* is properly rounded and fitted to the tip of the frame with a suitable bevel or incline, so that it will press the top end of the side plate up to position and prevent any backward movement. The two plates F are each bored through, as at *i*, and are secured by a single bolt, screw, or rivet, G, which passes through the handle at the position shown, and draws the plates firmly down to the frame. A recess, L, is formed on the inner side of the plates F, to give space for the sustaining lug and key E, which holds the bar-shank in the frame D. Said recess can be made by placing the wood in contact with a suitable rotating cutting-tool. The lips *d d* are made rounding upon their edges, so that the recesses *m m* may be formed by means of a suitable revolving cutter. By means of guides in connection with the cutters all of the plates can be uniformly gaged to a given size and form.

By making the parts, as shown and described, with the extension *f* and recesses *m m*, for entering and matching the ferrule D′ and lips *d*, a very strong and desirable connection is effected, while a single rivet, G, suffices for fastening the parts together, thus producing a very superior wrench at moderate expense of manufacture.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. The handle-frame provided with the lips or bracing-flanges *d d* within the angle at the neck, substantially as set forth.

2. The handle-frame D, provided with the lips or bracing-flanges *d d*, in combination with the bar A, jaw B, and rosette-screw C in an adjustable wrench.

3. The side plate, F, provided with the end extension, *f*, and shoulder *e*, in combination with the frame D, having the undercut ferrule portion D′, as set forth.

4. The side plates provided with grooves or

recesses *m m*, in combination with the handle-frame provided with side lips or flanges, *d d*, for matching said recesses, substantially as set forth.

5. The side plate, F, provided with the end extension, *f*, and recesses *m m*, in combination with the handle-frame D, provided with the undercut ferrule portion D′, and the guard-lips *d d*, substantially as and for the purpose set forth.

6. The combination, shown and described, of the wrench-bar A, furnished with movable jaw and adjusting-screw, the handle-frame provided with undercut ferrule portion and longitudinal guard-lips *d d*, fitted and keyed to said bar, the side plates having the extension *f*, longitudinal recesses *m m*, recess L, and beveled end *h*, for matching said frame, and the single fastening bolt or rivet G, as and for the purposes set forth.

Witness my hand this 28th day of March, A. D. 1884.

LORING COES.

Witnesses:

CHAS. H. BURLEIGH,

GEO. M. RICE.