No. 608,439. Patented Aug. 2, 1898.

F. L. COES.

SCREW WRENCH.

(Application filed Sept. 23, 1897.)

(No Model.)

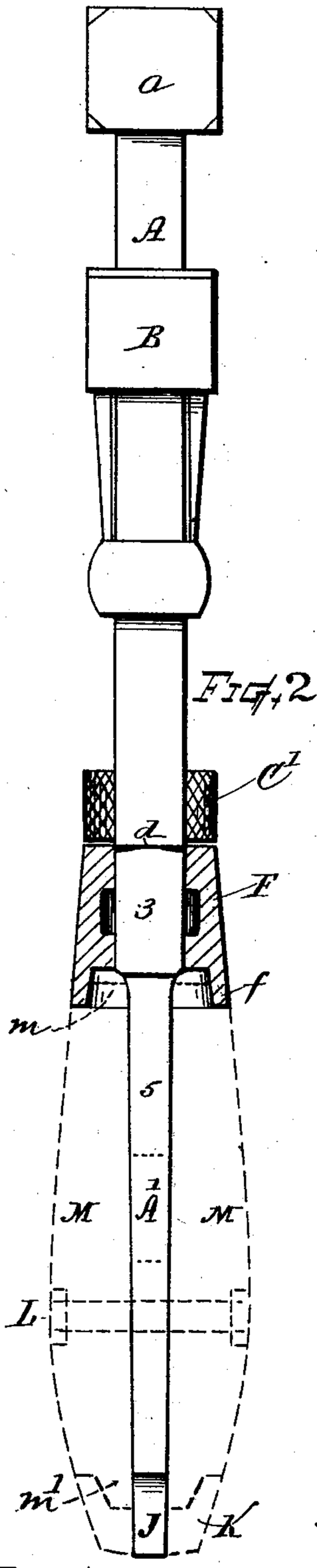

FIG. 2

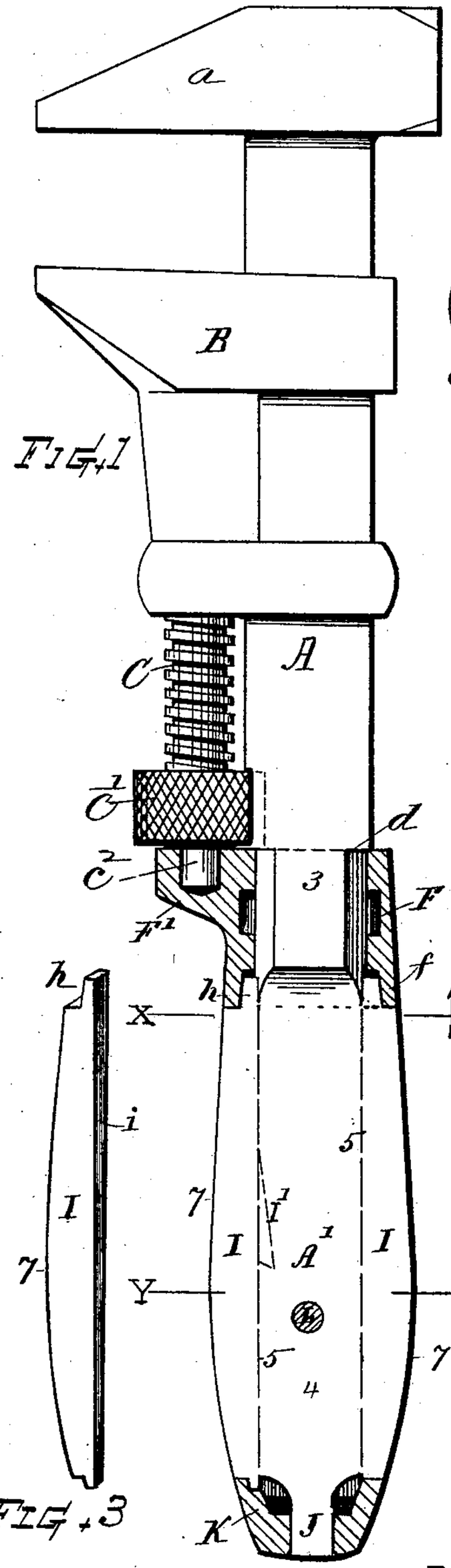

FIG. 1

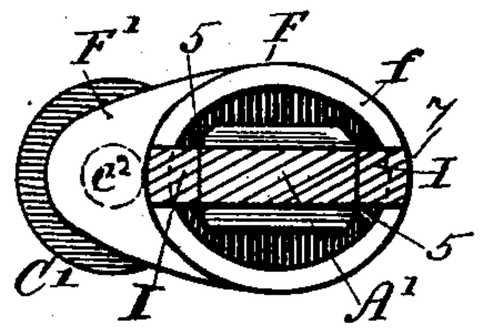

FIG. 4

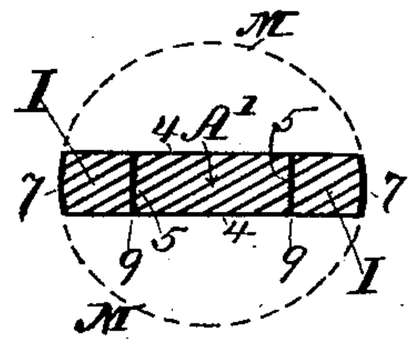

FIG. 5

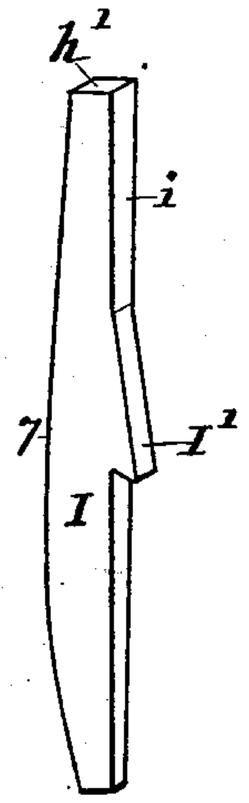

FIG. 3a

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UNITED STATES PATENT OFFICE.

FREDERICK L. COES, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO THE COES WRENCH COMPANY, OF SAME PLACE.

SCREW-WRENCH.

SPECIFICATION forming part of Letters Patent No. 608,439, dated August 2, 1898.

Application filed September 23, 1897. Serial No. 652,701. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK L. COES, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Screw-Wrenches, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

This invention relates to an improved construction for the handle of a wrench of the character described, the object being to provide an efficient and durable wrench-handle having, in combination with its bar-shank and screw-supporting ferrule, applied reinforce-pieces or filling-strips arranged on the edge of the bar-shank after the ferrule is placed and adapted for firmly supporting the ferrule and also for filling the space between the side scales from the bar-shank to the handle outline along the length of the handle from the ferrule to the tip-piece, as more fully hereinafter explained.

These objects I attain by the means illustrated in the drawings, wherein—

Figure 1 is a side view, partly in section, showing a wrench embodying my invention. Fig. 2 is a rear view of the wrench, showing the back of the bar-shank and the outline of the handle in dotted outline. Fig. 3 is a separate perspective view of the reinforce or filling piece, and Fig. 3^a is a modification of the same. Fig. 4 is a transverse section at line X X, looking upward; and Fig. 5 is a section of the bar-shank and reinforce-pieces at line Y Y, Fig. 1.

In the wrench shown in the drawings the upper portion of the bar A, having the fixed jaw or head *a* thereon, the movable jaw B, the jaw-adjusting screw C, with its rosette head C′ and spindle c^2, and the screw-supporting ferrule F, with its step-bearing F′ and undercut bottom rim *f*, can all be made in well-known suitable form or as heretofore employed in the "Coes" wrench. The bar is provided with the shoulder *d*, against which the top end *g* of the ferrule F abuts when in fixed position. The neck portion 3 of the bar-shank A′ is shaped to fit the hole or eye through the ferrule F, which is passed over the bar-shank and forced onto the neck 3 firmly up against the shoulder *d*, as heretofore practiced.

In accordance with my present improvement the bar-shank A′ is primarily formed straight, with parallel edges, (indicated by the broken lines 5 on Fig. 1,) the edges being preferably transversely flat at right angles to the flat side surfaces 4 of the shank. The lower end of the shank is fitted with the usual stub-tang J for receiving the cup-flanged tip-piece K, to be fixed thereto by screw-threads or by riveting the end of the tang, which latter is the common practice.

I I indicate the applied reinforce or filling pieces which I affix to the front and rear edges of the bar-shank A′ after the ferrule has been pressed onto the bar.

The reinforce-piece I is designed to extend from the ferrule to the tip and to fill the space between the two side scales M, the inner surface being fitted to match against the edge of the bar-shank and its outer edge or surface 7 shaped to the required contour of the handle outline.

The adjacent attaching-surfaces on the bar-shank and the reinforce-pieces I can be made either plain and straight, as indicated at *i* on Fig. 3, or with suitably-formed countermatching projections and recesses or interlocking lugs and notches, as indicated at I′, Fig. 3^a, and by dotted line on Fig. 1. Its ends may be either square, as at *h*′, to abut against the rims of the ferrule and tip-piece, or preferably made, as at *h*, with a shoulder and tongue, so as to both abut against and engage under the rims of the ferrule and tip, or either of them, as in any instance preferred. These reinforce-pieces I I are adjusted upon the edges of the bar-shank after the ferrule has been placed and before the tip K is put on. They are best permanently fixed in position by solidly brazing together the adjacent surfaces along the lines 5 and, if desired, at the end adjacent to the rim *f* of the ferrule, thus producing a sure and reliable support against any backward thrust of the ferrule F, and also providing the metal-showing surface at front and rear sides of the hadle, also serving as a seat for the side scales M, which give

the side form to the handle, as per dotted lines, Figs. 2 and 5, which side scales may be secured to the shank in well-known manner by the end tenons *m* and *m'* and the rivet or bolt L.

In assembling the parts the movable jaw is first slipped over the shank onto the rectangular part of the bar. The screw C is entered therein and its rosette head arranged in the cavity at the front of the bar. The ferrule is then passed over the shank and forced onto the neck 3 firmly against the shoulder *d*, its step receiving the spindle end of the screw in usual manner After the parts are thus assembled the reinforce pieces I are placed in position on the edges of the bar-shank, a thin strip 9 or granules of brass or other equivalent fusible metal or alloy being introduced between the adjacent surfaces at 5, and the pieces are then clamped or temporarily secured in position with their top ends firmly abutted against the rim *f* of the ferrule. Heat is then applied for fusing the brass or alloy and thereby permanently and solidly attaching the reinforce-pieces I to the bar-shank A by the brazing of the joint along their contact-line.

In some instances when the countermatched surfaces interlock, as at I', and the ends are tongued, as at *h*, the brazing of the parts together may be omitted, the riveting of the tip-piece to the tang being depended on to keep the parts in place.

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

1. In a wrench-handle, in combination with the flat bar-shank, the ferrule adapted to slip over said shank and fitting upon the bar-shank neck, the tip-piece, and the side scales, of a ferrule-supporting reinforce extending from the ferrule to the tip-piece, its outer edge conforming to the outline shape of the handle, its inner edge matching the edge of the bar-shank, and its width filling the space between the side scales; said reinforce applied to and supported in connection with the edge of the bar-shank, its ends respectively engaging or abutting on the tip-piece and on the ferrule, in the manner set forth.

2. In a screw-wrench provided with the bar and fixed jaw, the movable jaw, and jaw-adjusting screw; a wrench-handle having in combination with the screw-supporting ferrule and bar, a pair of oppositely-applied reinforce-pieces conforming to the space between the bar-shank and handle outline, and countermatching the edges of said bar-shank from the ferrule to the tip, said reinforce-pieces attached to the edges of said bar-shank below and in a manner for supporting the ferrule.

3. In combination with the wrench-bar having the flat bar-shank adapted to pass through the ferrule-eye; and the ferrule fitted upon the neck of said bar-shank; the reinforce-pieces fitted upon the edges of bar-shank with their ends abutting against the ferrule, and permanently attached to said bar-shank by brazing together the adjacent surfaces along the junction-line, substantially as and for the purpose set forth.

Witness my hand this 17th day of September, 1897.

FREDERICK L. COES.

Witnesses:
F. H. BEALS,
CHAS. H. BURLEIGH.