(No Model.)

J. H. COES.

Wrench.

No. 232,114. Patented Sept. 14, 1880.

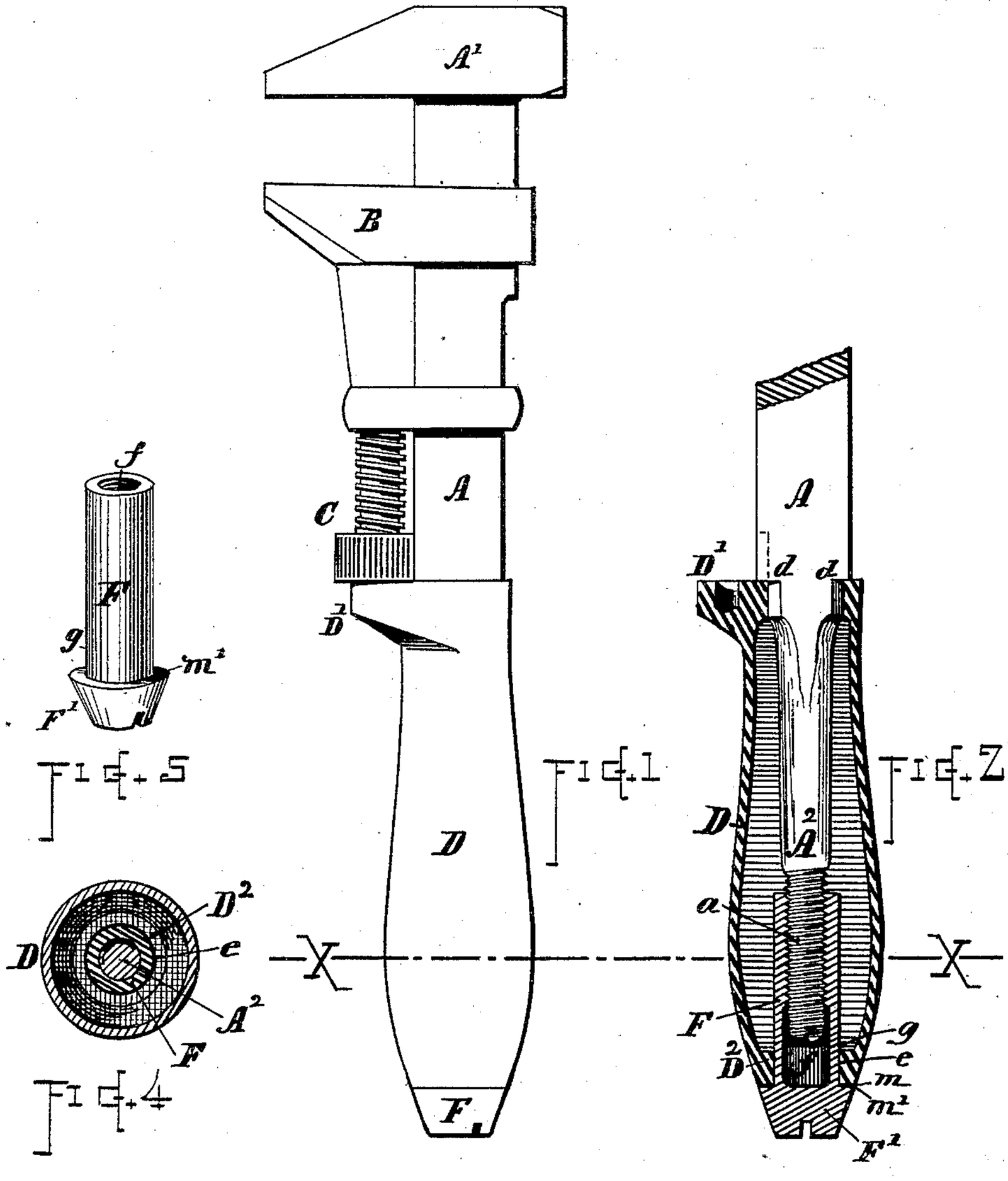

FIG. 5 FIG. 1 FIG. 2 FIG. 4

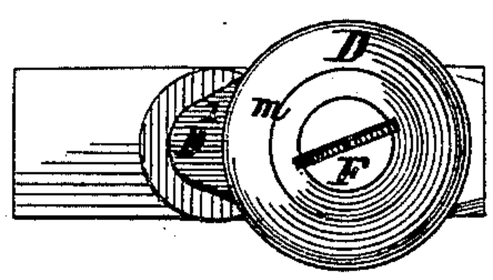

FIG. 3

WITNESSES.

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JOHN H. COES, OF WORCESTER, MASSACHUSETTS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 232,114, dated September 14, 1880.

Application filed July 23, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. COES, of 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, and in which—

Figure 1 is a side view of a wrench embracing my improvements. Fig. 2 is a central longitudinal sectional view of the handle. Fig. 3 is an end view of the handle. Fig. 4 is a transverse sectional view at line X X, and Fig. 5 is a perspective view of the hollow retaining-screw.

My invention relates to improvements in that class of wrenches known as the "Coes screw-wrench," and the objects of my improvements are to provide a neat and serviceable metal-handled wrench; to afford a simple, efficient, and practical attachment for supporting and retaining the handle on the bar; to obviate the necessity of extreme accuracy in the formation of the bar-shanks and their subsequent fitting to length; and to render the wrench strong, inexpensive, and desirable in construction and appearance.

I attain these objects by the construction illustrated in the accompanying drawings, wherein A denotes the wrench-bar with head A′ on its upper end, B indicates the movable jaw, and C is the rosette and screw for operating the same, all of which parts are formed and arranged substantially in the ordinary manner.

The bar-shank A^2 is made somewhat shorter than usual, and the screw-thread *a* is formed thereon without finishing off the end of the shank, the only close finish required being the milled shoulders *d d*, for the top end of the handle D to bear against, as indicated. The handle D is formed completely of metal, preferably cast of malleable iron, cored out internally, so as to make a light thin shell, and externally finished smooth and round to fit the hand. The upper end of the handle D is made in form similar to the ordinary ferrule, with a projection, D′, to receive and support the rosette-bearing, and with a central opening fitting the shoulders *d d*, while the lower end of said handle is milled out and dressed off, forming a regular-sized opening, *e*, and an annular bearing-surface, *m*, on the inwardly-projecting flange D^2, as shown, all being a single piece.

The handle D is held to the bar-shank by means of a hollow retaining-screw, F, which enters the end of said handle and screws onto the end of the shank A^2, as illustrated. This retaining-screw F is preferably formed of malleable iron, and is made with a solid head, F′, and a long hollow spindle having a central opening, *f*, extending from its end down as far as the head, but not completely through. The upper part of said opening *f* is furnished with a screw-thread to fit the thread *a* of the bar-shank, while the exterior surface, *g*, of the piece is turned or milled off to accurately fit the opening *e* of the handle end, and the shoulder *m′* at the head F′ is finished to match the annular bearing-surface *m* of the handle. The head F′ is furnished with a screw-driver nick or equivalent gripe, so that the parts can be forced firmly together by turning said screw.

The several parts are arranged in relation to each other as shown in the drawings, and together form a very neat, strong, and desirable wrench.

In the construction described no care is required in the formation and fitting of the bar-shanks, and their ends do not have to be dressed off or cut to uniform length, since the hollow screw F forms the end finish of the handle and draws all the parts up to a firm close bearing, regardless of variations in the lengths of bar-shanks and handles.

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

The combination, with the bar A, movable jaw B, and rosette-screw C, of the metal handle D, formed integral with projection D′, and flange D^2, having bearing-surface *m*, and the hollow retaining-screw F, with exterior surface, *g*, fitted to the opening *e*, shoulder *m′*, to match the surface *m*, and screw-threaded opening *f*, embracing the unfinished threaded end of the bar-shank, as and for the purposes shown and described.

Witness my hand this 21st day of July, A. D. 1880.

JOHN H. COES.

Witnesses:
CHAS. H. BURLEIGH,
SAML. H. CLARY.