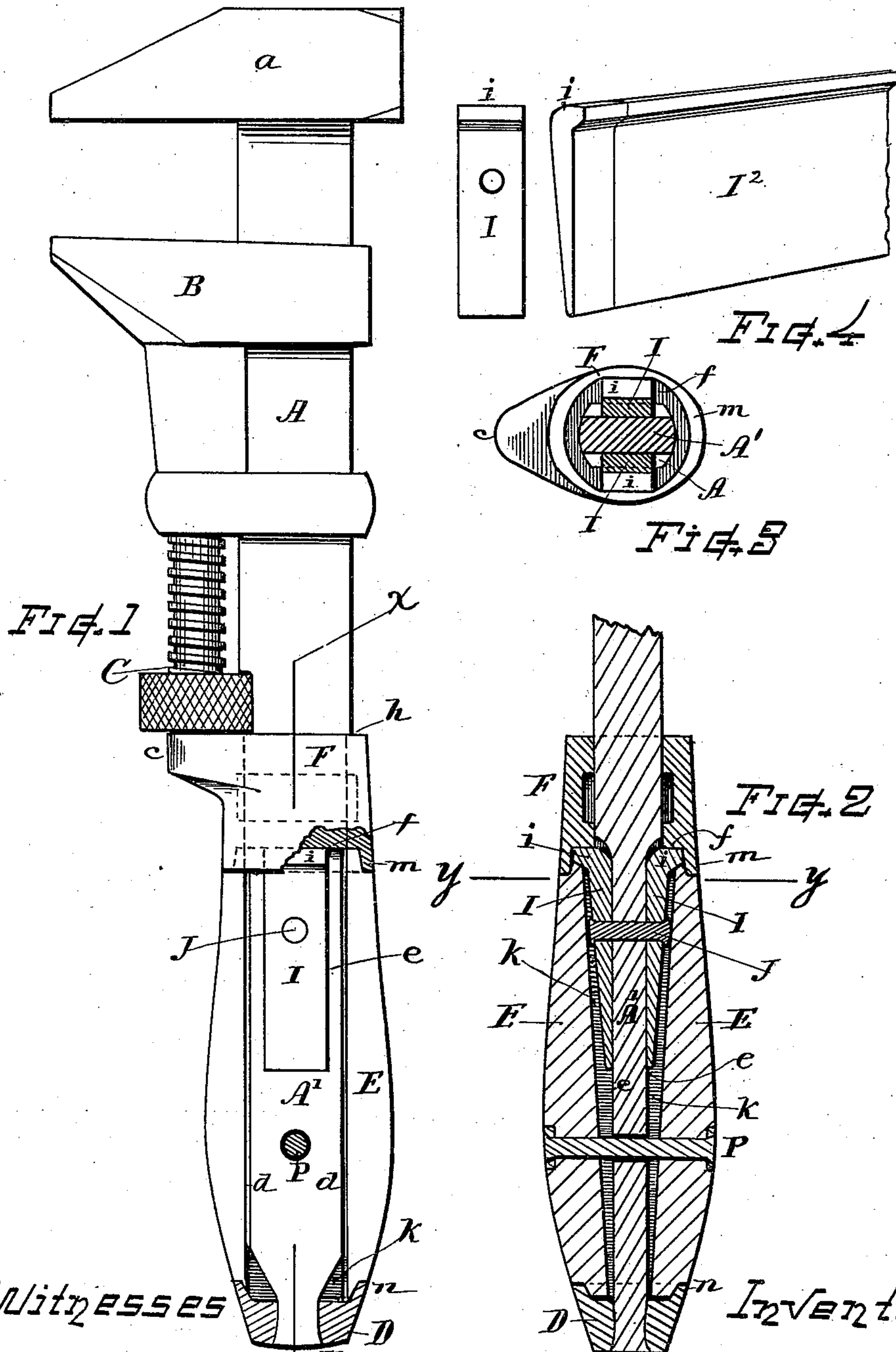


(No Model.)

L. COES.
WRENCH.

No. 466,271.

Patented Dec. 29, 1891.



WITNESSES

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LORING COES, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO THE COES
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WRENCH.

SPECIFICATION forming part of Letters Patent No. 466,271, dated December 29, 1891.

Application filed November 9, 1891. Serial No. 411,238. (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 a new and useful Improvement in 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.

The object of my present invention is to afford a simple, efficient, and improved construction for wrenches of the class illustrated, and to provide therein supporting-knees, dogs, or brace-plates for sustaining the ferrule in combination with the bar-shank at the opposite sides thereof, said knees being constructed and arranged for engaging the shoulder or end of the ferrules and for attachment to the side bar-shank, in the manner substantially as shown and herein described, thereby affording facility and convenience of manufacture and producing a wrench of superior strength and efficiency.

The particular subject-matter claimed is hereinafter definitely specified.

In the drawings, Figure 1 is a part side part sectional view of a "Coes" wrench, illustrating my present improvement. Fig. 2 is a longitudinal section through the handle at line *x x*. Fig. 3 is a transverse section at line *y y*, and Fig. 4 shows a separate view of the knee or brace-plate and the blank from which the same may be formed.

In my present wrench the main portion of the bar A, head, or fixed jaw *a*, movable jaw B, rosette-screw C, and ferrule F are of suitable well-known form or as heretofore employed in the Coes wrench. The shank A' of the bar A is formed with parallel edges *d d*, that are milled off on a cylindrical curve and reduced in thickness laterally with flat sides *e e*. The ferrule F is formed with two interior bearing-surfaces that rest against the sides of the bar A, and with a transverse surface or shoulder *f* at its lower end, preferably with an overhanging lip *m* for receiving the end of the scale-plates or wood portion of the handle. The top end of the ferrule has the step *c* for supporting the rosette-screw, and is fitted to

match against the shoulder *h* on the bar A in the usual manner.

Upon the two opposite sides *e e* of the bar-shank A' in my present invention I employ longitudinally-disposed metal knees or brace-plates I, the upper ends *i* of which are fitted to abut firmly against the end or shoulder *f* on the ferrule F, and said knees or brace-plates are rigidly attached to the bar-shank by a rivet J, (one or more, as desired,) which passes through suitable holes in the brace-plates and bar-shank and has its ends firmly riveted down on the exterior of the parts, as shown in Fig. 2. These knees or brace-plates force the ferrule rigidly against the shoulder *h* and efficiently sustain said ferrule against the backward or downward pressure exerted thereon from the jaw B and rosette-screw when the wrench is in use. The knees I are preferably made with an outwardly-projecting lip at their upper end *i*, or of such other form as will afford ample support against the ferrule and which will permit the end of the wood scales or side plates E to pass under the lip *m*. These knees or brace-plates I can be readily made by first rolling a metal bar or blank I² of suitable shape and then shearing the knees or brace-plates in their proper width from the end of said blank, (see Fig. 4,) and then forming therein a hole or holes to receive the rivet J. In this matter the parts can be quickly and cheaply manufactured.

The tip D at the end of the handle is provided with the lip *n* for receiving the end of the wood side plates E, as heretofore employed. Said side plates are fitted to match together in halves, and are properly recessed on their inner sides, as at *k*, to afford space for the bar-shank and the knees I. The side plates are secured together by a transversely-disposed rivet P in well-known manner.

When assembling the parts the jaw B, rosette-screw, and ferrule F are severally arranged upon the bar, the ferrule fitting against the shoulder *h*. The knees or brace-plates I are then put onto the sides of the bar, with their heads abutting against the end or shoulder *f* of the ferrule, and the rivet J is inserted and clinched, thus securely fastening the ferrule in place. The side scales E, which give form to the handle, are then put in position

and the tip D put onto the reduced end of the bar, which latter is then riveted down upon said tip, as at *r*.

In a previous application for Letters Patent, Serial No. 407,827, I have described a wrench-ferrule wherein the ferrule is provided with means for its support upon the sides of the bar-shank, but in which the supporting parts are integral with the ferrule; but in my present invention the supporting parts or knees I are made independent and separate from the ferrule. It will therefore be understood that the present invention embraces the independent attached knees or brace-plates made separate from the ferrule and arranged on the bar-shank in the peculiar manner substantially as above set forth.

I claim as my invention herein to be secured by Letters Patent—

1. In an adjustable wrench of the class shown, the combination, with the ferrule and the bar-shank, of two knees or brace-plates rigidly secured upon opposite sides of the bar-

shank and having their upper ends or shoulders abutting against the lower end or shoulder of the ferrule, substantially as shown, and for the purpose described.

2. The wrench-handle composed of the ferrule F, the scales or side plates E, and metal tip D, mounted on the bar-shank and having the knees or brace-plates I disposed upon the opposite sides of said bar-shank, with their upper ends abutting against the ferrule and rigidly secured in position thereon by a rivet that extends transversely through said plates and shank, the said side plates covering said knees and rigidly attached together by the pin or rivet P, substantially as shown and described.

Witness my hand this 6th day of November, A. D. 1891.

LORING COES.

Witnesses:

JOHN H. COES,

CHAS. H. BURLEIGH.