(No Model.)

L. & F. L. COES.

WRENCH HANDLE.

No. 538,411. Patented Apr. 30, 1895.

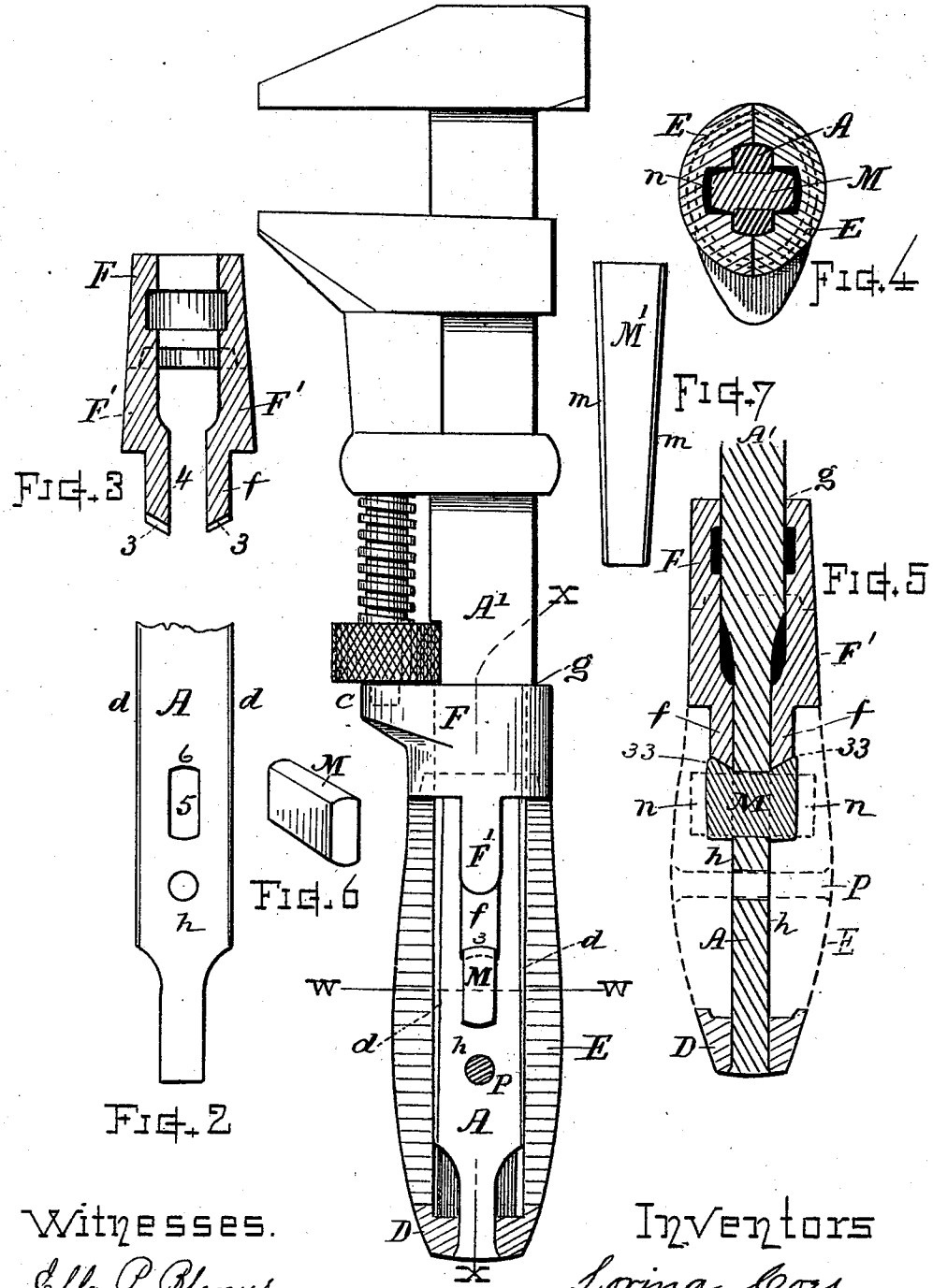

FIG. 4

FIG. 7

FIG. 3

FIG. 5

FIG. 6

FIG. 2

FIG. 1

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UNITED STATES PATENT OFFICE.

LORING COES AND FREDERIC L. COES, OF WORCESTER, MASSACHUSETTS, ASSIGNORS TO THE COES WRENCH COMPANY, OF SAME PLACE.

WRENCH-HANDLE.

SPECIFICATION forming part of Letters Patent No. 538,411, dated April 30, 1895.

Application filed September 26, 1894. Serial No. 524,144. (No model.)

To all whom it may concern:

Be it known that we, LORING COES and FREDERIC L. COES, citizens of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Wrench-Handles, 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 improvement in the construction of wrench or tool handles of that class illustrated in Letters Patent No. 465,347 heretofore granted, the object of our present invention being to simplify and cheapen the manufacture and to render the support of the ferrule more substantial and less liable to fracture at its junction with the bar.

In the drawings, Figure 1 is a side view of a wrench-handle with one of the scales or wood side plates removed. Fig. 2 is a side view of a portion of the shank. Fig. 3 is a longitudinal section of the ferrule. Fig. 4 is a transverse section at line *w w*. Fig. 5 is a longitudinal section of the bar and ferrule at position indicated by line *x x*. Fig. 6 is a perspective view of the block or abutment-piece, and Fig. 7 a side view of such piece when formed as a taper wedge.

In general construction the wrench bar and handle are substantially similar to that described in the above mentioned patent, No. 465,347, excepting in the specific features of improvement hereinafter particularly specified and claimed.

A denotes the shank of the bar A′, which shank extends into or through the handle. A shoulder *g* is formed as usual on the bar at the top of the shank, below which the shank has rounded edges *d d* and flat sides *h h*, as shown.

The ferrule F, which is formed with a central opening to fit the bar, with its end against the shoulder *g*, is provided at its two sides with downwardly extended tongues or braces F′. The ends of the thin portions *f* of these tongues are, in accordance with our present invention, formed each with an upward outward bevel and transversely concaved or recessed, as at 3; the inner surfaces 4 of the parts *f* being fitted to rest against the flat sides *h* of the bar-shank.

Through the bar-shank A we punch or form a centrally located oblong opening 5, preferably with straight sides longitudinally parallel with the bar-shank, and having rounded ends; the upper end 6 of said opening being at a distance from the shoulder *g* approximately corresponding to the length of the ferrule and its side tongues. Through this opening we introduce a block or wedge M with ends that project and are upset at the opposite sides of the shank in a manner to form a lock and permanent abutment for the ferrule tongues. This abutment piece can be primarily formed either as a section cut from the end of a flattened rod, as in Fig. 6, or as a long wedge M′, Fig. 7; flat on the sides and tapered on the edge or edges *m*.

When assembling the parts the ferrule F is placed upon the shank and the piece M is passed through the opening 5. The driving in of the piece M below the ends 3 of the tongues forces the ferrule firmly against the shoulder *g*. Then by means of any suitable mechanism the two ends *n* (see dotted line Fig. 5) of the block or wedge are upset (the ends of the wedge-shaped piece M′ being previously cut off if required) causing the metal thereof to solidly fill the opening and to clinch or over impinge upon the beveled concaved ends of the ferrule tongues, as at 33, Fig. 5, crowding the ferrule tightly to the shoulder *g* and locking the tongue extensions *f* rigidly to the sides of the bar-shank, thereby making a permanent solid abutment and overlocking support for the ferrule, and this too in a manner which greatly facilitates convenience and economy in manufacture; while producing a better and more efficient attachment of the handle.

By the wedge-shaped piece M a close fit of the ferrule against the shoulder is attained since the wedge will take up any looseness or back lash due to inaccuracy in the length of the ferrule or its side tongues and will force the ferrule to the shoulder and then the upsetting of the abutment ends will make the connection practically solid.

The wood scales or side pieces E, which give shape to the handle, are chambered to overlie the upset ends of the abutment block M. (See Fig. 4.) Said side pieces are formed and secured in position by ends that underlock in the ferrule and the tip D on the end of the shank, and by the transverse pin P, as described in the prior patent above referred to, or in any well known manner.

What we claim, and desire to secure by Letters Patent, is—

1. In a tool or wrench handle, the combination, as described, of the shank having the oblong opening 5, the ferrule having its tongues or side-braces fitted with transversely concaved beveled ends 3, and inner surfaces 4 that rest upon the flat sides of the shank, and the wedge or block extending through said opening in the shank, its projecting portions at either side of the shank upset onto the concaved beveled ends of said ferrule tongues, substantially as set forth.

2. A wrench having its bar fitted with a shoulder, its ferrule provided with side tongues, the ends thereof formed with a bevel, an abutment block inserted through the bar-shank and having its opposite ends upset upon the ends of said tongues and forming a permanent abutment and over-locking support for said tongues whereby said ferrule is sustained rigidly against the shoulder and in solid connection with the bar-shank, for the purpose set forth.

Witness our hands this 22d day of September, A. D. 1894.

LORING COES.
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Witnesses:
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