No. 675,416. Patented June 4, 1901.

F. SEARLE.

SCREW WRENCH.

Application filed Feb. 28, 1901.

(No Model.)

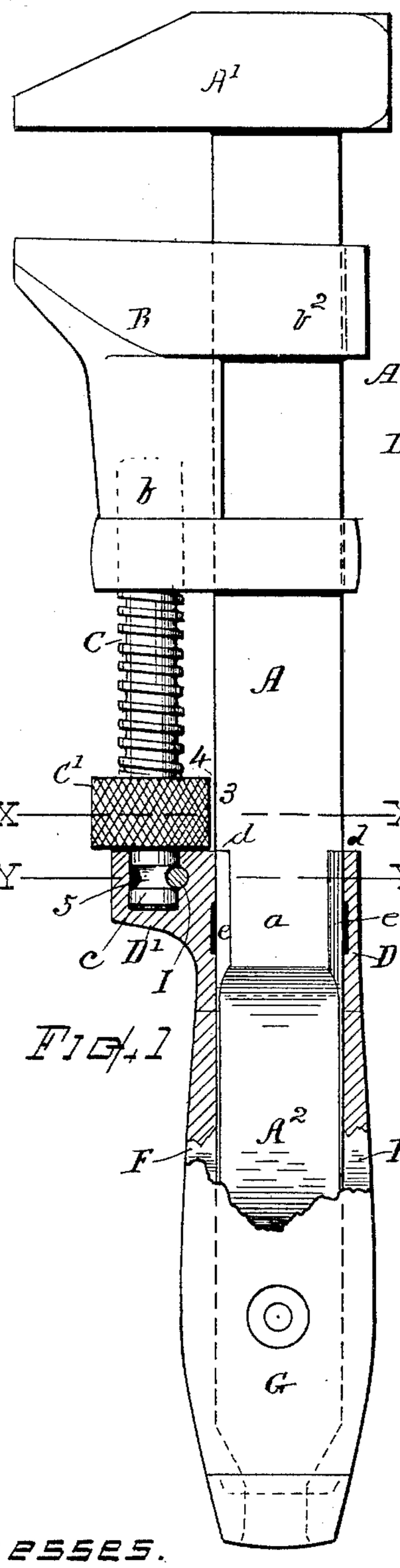

FIG. 1

FIG. 2

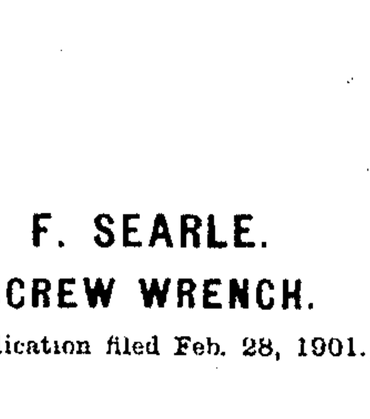

Fig. 7.

FIG. 3

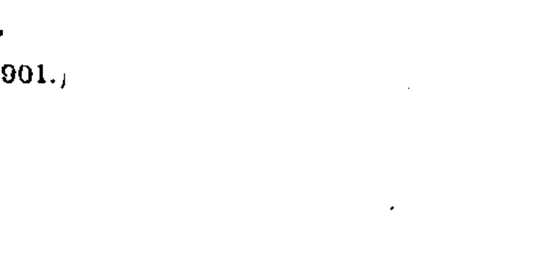

FIG. 4

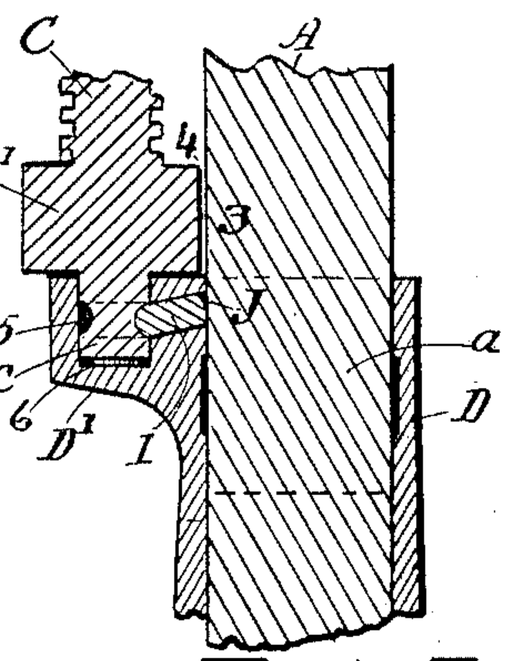

FIG. 5

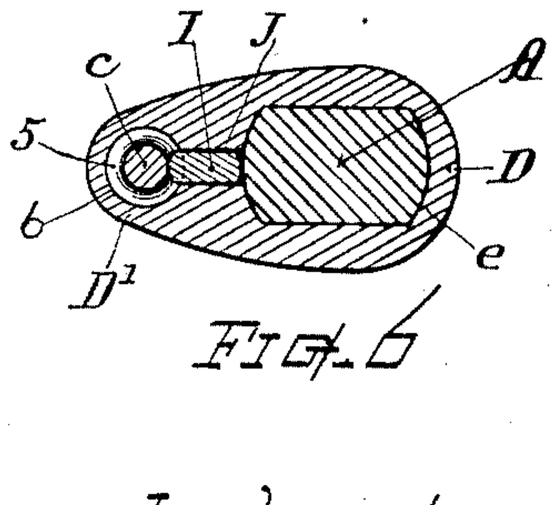

FIG. 6

Witnesses.
Charles L. Bacon
Dennison & King

Inventor.
Frederick Searle
By Chas. H. Burleigh
Attorney

UNITED STATES PATENT OFFICE.

FREDERICK SEARLE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO LORING COES, OF SAME PLACE.

SCREW-WRENCH.

SPECIFICATION forming part of Letters Patent No. 675,416, dated June 4, 1901.

Application filed February 28, 1901. Serial No. 49,210. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK SEARLE, 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.

My present invention relates to the construction in a "Coes" screw-wrench of the wrench-bar and the adjusting screw-spindle in a manner to avoid the customary notch or rosette-recess in the bar and to the peculiar manner of combining the screw-spindle with the wrench-bar and the supporting collar or ferrule, as hereinafter explained, the objects being to eliminate a source of weakness heretofore common to wrenches of this class and to render the structure stronger, cleaner, and more efficient for service.

In the drawings, Figure 1 represents a side view, partly in section, showing a wrench constructed in accordance with my invention. Fig. 2 is a front edge view of the lower portion of the wrench-bar. Fig. 3 represents a transverse section at line $x x$ on Fig. 1. Fig. 4 is a transverse section at line Y Y. Fig. 5 represents a longitudinal section showing a somewhat-modified arrangement of the key or pin. Fig. 6 is a transverse section of the same, corresponding with the position of line Y Y; and Fig. 7 is a transverse section showing two key-pins for engaging the screw-spindle.

Referring to parts, A denotes the wrench-bar, having the usual head or jaw A′ fixed thereon. B indicates the adjustable jaw that slides on said bar.

C indicates the jaw-adjusting screw or spindle, having the boss or rosette C′ formed thereon. D indicates the collar or ferrule, F the handle-frame, and G the side plate of the handle.

The wrench-bar A is in accordance with my invention made of full dimension and plain along its front edge at the part 3, the notch or recess customarily formed therein for engaging the rosette or screw-head being in this case omitted, so that the full square face planes of the bar extend down to the top end of the ferrule or collar D. The portion of the bar a within the collar and, if desired, the tang A^2 are formed with the opposite rounded edges e e, leaving shoulders d d at both the front and rear corners of the bar, against which the collar abuts; but there is no reduction of the bar in line with the rosette C′ of the adjusting-screw.

The barrel b of the sliding jaw B is formed and arranged with an increased outward projection, and I locate the axis of the jaw-adjusting screw at such distance away from the bar A that the periphery of the rosette C′ is outside of the face plane of the bar and clears the front edge of the bar at 3 with sufficient space 4 between the parts, so that the rosette can be revolved without contact therewith. In the journal end c of the screw-spindle, which is of the usual full diametric dimension, I provide a circumferential groove or offset 5, which may be semicircular or of any suitable form. The journal c is fitted to turn within the bearing-opening 6, drilled in and completely surrounded by the metal of the projecting step D′ of the ferrule or collar D, and I confine the screw-spindle from endwise displacement by a key or pin I, supported in the metal of the collar and engaging with the groove or offset 5 of the journal, substantially as illustrated. The pin I can be inserted in a pin-hole formed transversely through the step, as shown in Figs. 1 and 4, its ends being riveted and finished off flush with the exterior surface of the collar. If desired, two pins may be employed, respectively engaging the groove 5 at opposite sides of the journal c. An example of this nature is illustrated by Fig. 7.

In some instances the hole for the interlocking pin may be drilled from the interior of the collar or ferrule, as at J, and the pin I inserted before assembling the handle frame and bar, the pin thus occupying a position as shown in Figs. 5 and 6. In this instance the pin I will be securely confined in place by the neck a of the bar A when the parts are assembled.

The handle-frame F, which may be integral with the collar D, may be of well-known

or suitable construction, as may also be the scales or parts G of the handle, that give rounded form thereto.

As advantages attained by the invention or improved construction illustrated and hereinbefore described, it may be noted that I eliminate a heretofore-existing cause of weakness and obviate the necessity of recessing the wrench-bar as a means for holding the rosette for resisting endwise displacement of the screw-spindle. Furthermore, the support of the jaw B is brought more directly beneath that part of the jaw which takes the strain when the wrench is in use, thereby in a measure overcoming the angular leverage of the jaw and its consequent tendency to stretch and loosen the jaw-straps b^2. The rosette being outside the plane of the bar also avoids the accumulation of dirt and grease between the rosette and bar, as occurs under some conditions of use in wrenches having a notch or recess back of the rosette.

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

1. In a screw-wrench of the character described, comprising the wrench-bar provided with a fixed jaw, a flatwise-reduced handle-supporting shank and a plain front edge non-recessed above the handle, the sliding jaw having the forwardly-outstanding barrel with upper and lower straps embracing said wrench-bar, the handle-frame and ferrule-collar supporting the edge and neck of said bar-shank, and carrying the forwardly-projected step having a cylindrical bearing-cavity opening in its upper or rosette-seating surface, a pin-hole communicating with said cavity, the jaw-adjusting screw having a circumferentially-grooved journal fitting said bearing and terminating within the step, said screw disposed at a relative advanced position with its full rosette-head outside the plane of the wrench-bar face, and a pin or key within said pin-hole, embraced by the solid metal of the step, and interlocking with the circumferential groove of the screw-journal for confining said jaw-adjusting screw from upward endwise movement, substantially as set forth.

2. In a screw-wrench, comprising a bar with fixed jaw, a handle, a movable jaw, and a jaw-adjusting screw; the wrench-bar formed with a partially-rounded neck with shoulders at the front and rear angles, the body of said bar non-recessed above said shoulders, a handle-frame with a collar fitting the neck of said bar against said shoulders, a screw-step bearing and a key-pin hole therein, the jaw-adjusting screw having the channeled journal arranged in said bearing with the rosette clear from the face-plane of the bar, and a key or pin for retaining said journal in its bearing, said pin confined by the assembling of the bar and collar, substantially as set forth.

Witness my hand this 26th day of February, 1901.

FREDERICK SEARLE.

Witnesses:
CHAS. H. BURLEIGH,
FRANK L. COES.