

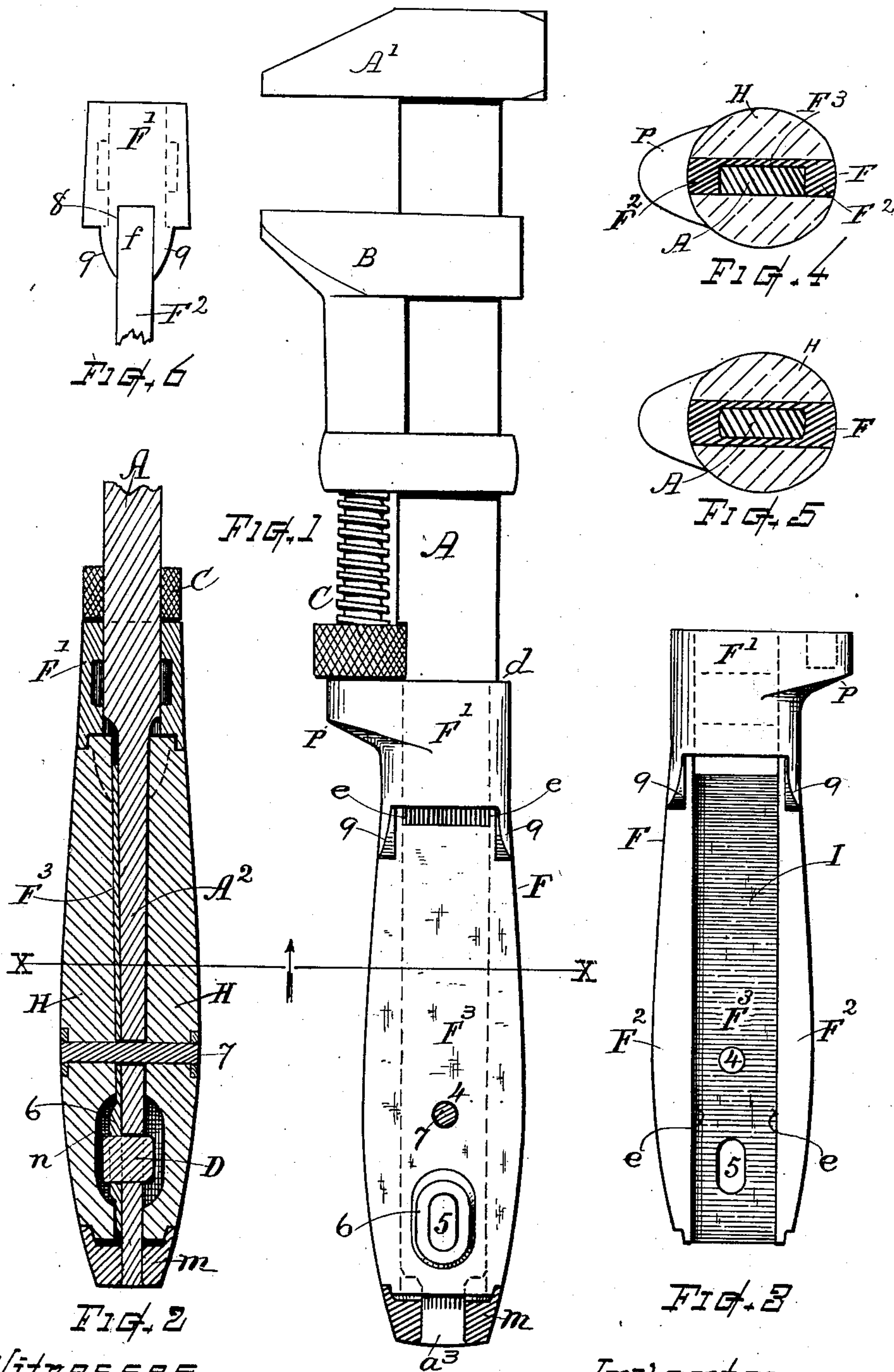
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Patented Apr. 30, 1901.

F. SEARLE.
CONSTRUCTION OF WRENCHES.

(Application filed Mar. 7, 1901.)

(No Model.)



Witnesses.

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CONSTRUCTION OF WRENCHES.

SPECIFICATION forming part of Letters Patent No. 673,089, dated April 30, 1901.

Application filed March 7, 1901. Serial No. 50,196. (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 the Construction of 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 an improved construction for the metal supporting-frame employed in the handle of a wrench of the class illustrated, the objects being to provide a firm and unyielding unification of the handle parts with the tang or shank of the wrench-bar; also, to produce a strong and durable wrench structure that can be manufactured and assembled with practical facility. These objects I attain by the construction shown, the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 represents a side view of a wrench having my invention applied thereto, the outer portion of the handle being removed to show the details of the handle-frame. Fig. 2 represents a longitudinal central section. Fig. 3 is a side view of my improved handle-frame separate from other parts. Fig. 4 represents a transverse section at line X X. Fig. 5 is a similar section illustrating a modification; and Fig. 6 is a rear view of the collar, illustrating a modification hereinafter referred to.

Referring to the drawings, A denotes the main bar, which is, as usual, provided with a fixed jaw A' and is adapted for supporting and guiding the sliding jaw B in well-known manner. The wrench-bar is formed with a laterally-reduced or flattened tang or shank A², upon which the handle is mounted. Said flat shank corresponds with or is made slightly less in width than the main part of the bar A and extends into or throughout the handle fitting therein, with approximately parallel or slightly-tapering edges at its front and back. The extreme end a³ is reduced for receiving the tip-piece or handle end.

The movable jaw B, the adjusting-screw C,

and parts of the wrench which are not specifically described may be of well-known or any suitable construction, as the features of my improvement relate more especially to the handle and handle-frame when constructed and combined in the peculiar manner shown and described.

In accordance with my invention the handle-frame F, which is best made as a casting of steel or malleable iron, is formed with the screw-supporting collar F' and the longitudinal edge-supporting ribs F² solid or rigidly united at the junction of the ribs and collar-rim and the two opposite rib portions integrally joined to each other throughout their entire length (or approximately so) by a continuous plate-web F³, formed upon the side of the ribs F² and extending completely across the intervening space or channel I, within which the wrench-bar shank A² fits, the frame, as shown, thus affording a rigid bracing along the side of the bar-shank when the parts are assembled.

The wrench-bar is fitted with the usual rounded collar-seat and positioning-shoulders at d, and the ferrule or collar F', which is provided with the screw-bearing projection P, embraces the bar-shank, and its top end abuts against said shoulders d when the handle is in proper assembled position on the bar. The flattened portion of the shank is laterally offset to an amount equal to the thickness of the web F³, so that the combined metal portions occupy a uniformly central position in the handle.

The bar-shank A² is secured in the handle-frame by a key or wedging-stud D, driven through an opening 5 in the web-plate and through the bar-shank, as indicated. The metal of the web-plate is made with a boss 6 of increased thickness for supporting the key D.

The ribs or reinforce members F² are made to fill the space between the edge of the bar-shank and the outer limit or contour of the handle and externally finish flush with the handle-surface.

The outside of the web F serves as a seat for the wood side scale H, that gives roundness and shape to the handle, and a hole 4 is formed through the web and bar-shank for passage of the scale-attaching bolt or rivet 7,

which latter secures the opposite scales in well-known manner. The respective ends of the handle-scales H are fitted under the collar-rim and confined by a cup-tip or end piece 5 *m*, through which the reduced end *a*³ of the tang extends and is riveted thereto. Cavities *n* in the scales accommodate the key D and boss 6.

The interior of the collar F' and inner faces 10 of the ribs fit closely upon the bar-shank along the edge lines *e e*, while the ribs F² and integral web F³ form a strong and unyieldable reinforce upon the shank and by reason of the continuous integrally uniting of the two 15 ribs throughout approximately their entire length greatly add to the rigidity and permanent support of the ribs against the edges of the shank in the direction of the strain when using the wrench. The web also pre- 20 vents any liability of bending the rib F² by a sudden blow on the exterior when throwing the wrench around or by other rough usage to which wrenches are subjected. Hence the general efficiency and durability of the 25 wrench-handle are greatly enhanced.

In some instances, if desired, a continuous plate-web can be integrally formed upon each of the sides of the opposite edge-filling ribs F², as indicated in Fig. 5, thus making a com- 30 plete rectangular box or sheath, within which the laterally-flattened shank A² is supported.

While I prefer to make the collar F', edge-filling ribs F², and web F³ as a single complete casting, it may in some instances be 35 made with the integrally-joined pair of ribs formed separately from the collar portion and the ends *f* of said ribs then united with the collar-rim by fitting or securing the same into recesses formed in the front and rear of said 40 collar, as indicated at 8 on Fig. 6, the ends of the ribs being thus rigidly connected with the collar and supported laterally by the ear-flanges 9.

In a previous patent, No. 622,824, I have 45 shown a wrench wherein edge-reinforce ribs or side pieces are combined with the edges of a wrench-bar shank, but in a different nature of construction from that herein illustrated and described. Hence I do not here- 50 in broadly claim the employment of edge ribs irrespective of the way and manner in which the parts are constructed and combined.

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

55 1. A wrench-handle frame comprising opposite edge-filling ribs extending with an intervening space for the reception of the wrench-bar shank from the collar to the end

piece, their inner faces adapted to fit against the edges of said shank, said ribs being in- 60 tegrally connected to each other throughout their length by a plate-web across said intervening space adjacent to the side of the bar-shank, and cast solid upon the side of said ribs, substantially as set forth. 65

2. In a wrench-handle, the integrally-formed handle-frame composed of the ferrule-collar, two opposite edge-reinforce ribs at- 70 tached to said collar and extending lengthwise of the handle at its front and back, and a continuous plate-web solidly formed upon and uniting said ribs parallel with the side of the wrench-bar shank approximately from the collar to the extremities of said rib members.

3. A wrench provided with a bar having 75 collar-positioning shoulders and a laterally-offset flat shank, a collar surrounding said bar and having opposite rigidly-attached ribs that extend substantially the length of the handle, their inner faces embracing the edges 80 of the bar-shank, their outer faces formed on the contour of the handle, said opposite ribs being united, approximately their entire length, across the intervening space by a flat web disposed adjacent to the side of the bar- 85 shank and integrally formed upon said ribs, and a wedge-key inserted laterally through the web-plate and bar-shank, thereby immovably securing said parts and forcing the collar end against said shoulders. 90

4. In a screw-wrench, in combination with the main wrench-bar having the fixed jaw and flat shank, the movable jaw, and the jaw-adjusting screw; a handle-frame comprising the ferrule-collar, opposite edge-reinforce ribs 95 extending with an intervening space to the handle end, their inner edges adapted for embracing the edges of the wrench-bar shank, said reinforce-ribs united throughout their length by a plate-web integrally formed on 100 the sides of the ribs and adapted for seating against the broad side of the bar-shank, said web provided with an opening and a boss of increased thickness for seating the connect- 105 ing-key, the key connecting said web and bar-shank, the handle-scales seated upon the exterior of said web, the retaining-stud, and cupped end piece secured to said bar-shank, for the purposes set forth.

Witness my hand this 4th day of March, 110 1901.

FREDERICK SEARLE.

Witnesses:

CHAS. H. BURLEIGH,
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