

No. 666,029.

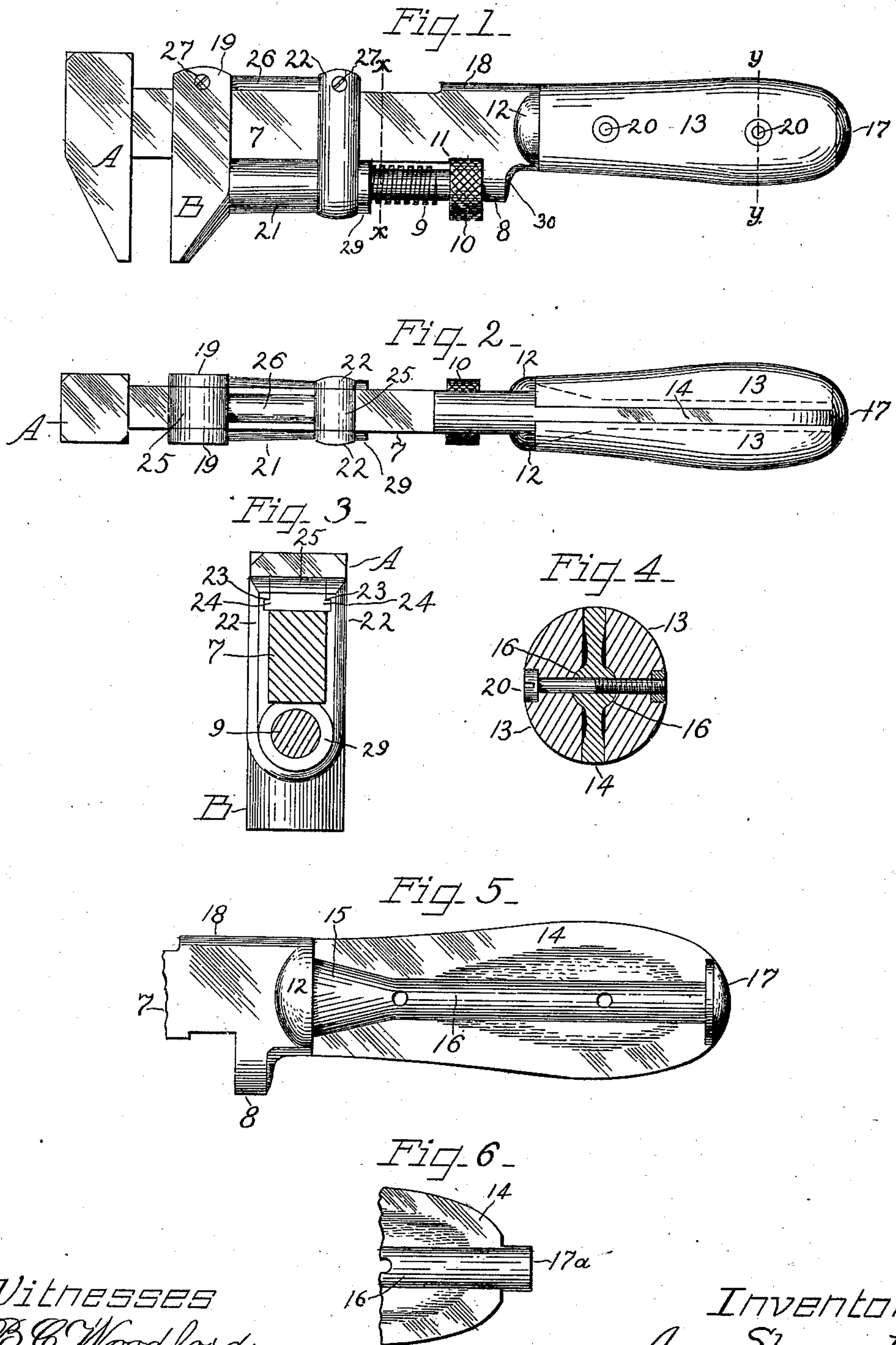
Patented Jan. 15, 1901.

A. SHEPARD.

WRENCH.

(Application filed July 5, 1900.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 666,029, dated January 15, 1901.

Application filed July 5, 1900. Serial No. 22,520. (No model.)

To all whom it may concern:

Be it known that I, AMOS SHEPARD, a citizen of the United States, residing at Plantsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to improvements in wrenches; and the objects of my improvements are simplicity and economy in construction and efficiency and convenience in use.

In the accompanying drawings, Figure 1 is a side view of my wrench. Fig. 2 is an edge view thereof, showing the back edge. Fig. 3 is an enlarged sectional view of the same on the line *xx* of Fig. 1. Fig. 4 is a sectional view on the line *yy* of Fig. 1. Fig. 5 is a side view of the handle portion with the handle-scales removed, and Fig. 6 is a side view of a part of the handle portion in a modified form.

My improvement relates to that class of screw-wrenches in which the step for the screw is integral with the wrench-bar and the bar is inserted laterally instead of longitudinally into the straps or clips of the sliding jaw. An early example of a wrench of this class is shown in the patent to Chapman, No. 100,978, dated March 22, 1870, in view of which I hereby disclaim making the step integral with the wrench-bar and making the slide open at its back for receiving the bar through said open back.

A designates the ordinary fixed jaw formed on the outer end of the ordinary wrench-bar 7, upon the squared body portion of which the movable jaw B is arranged to slide. The inner edge of this bar has formed integral therewith the step 8 for the ordinary screw 9, the milled head 10 of which screw rests in a recess 11, Fig. 1, at the inner edge of the wrench-bar in the ordinary manner. Projecting on each side of the wrench-bar and back of the step—that is, on the handle side of the step—is the integral bolster 12, with its front face of any desired form or finish and its rear face formed to correspond with the front end of the handle-scales 13. Back of this bolster, integral with the wrench-bar 7, there is a flattened handle-web 14 to receive the scales 13 and give sufficient strength to that end of the wrench. At the junction of

the web and bolster there is a conical reinforce 15, Fig. 5, from the end of which there is a central longitudinal rib 16, projecting beyond the general surface of the web in semicircular form, which rib extends to the rivet head or cap 17 at the end of the wrench.

The handle-scales 13 are of a length to fit in between the bolster 12 and rivet head or cap 17 and have on their inner faces a longitudinal groove and conoidal recess to fit the semicircular ribs 16 and conical reinforce 15, as indicated by broken lines in Fig. 2, and said scales are secured on the broad sides of the web by means of the screws or rivets 20.

I have shown slight depressions in the broader portion of the handle-web on each side the rib 16; but said depressions are made to facilitate drop-forging and not for any function in the finished article.

I prefer to form the handle-scales by boring and counterboring a solid handle and then dividing the same longitudinally to form the two scales. As in prior handles of this class, the contour of the handle-web 14 in side view conforms to that of the complete handle. At the back edge of the wrench-bar, opposite the screw-head 10 and the step 8, I form a rounded reinforce 18, that extends forward of the bolster 12 in continuation of the back of the handle-web to a point a little forward of the screw-head recess 11 in the wrench-bar, so as to make the recessed portion of the wrench-bar fully as strong as the main body of the bar.

If desired, the slide or movable jaw can be constructed and applied to the wrench-bar, hereinbefore described, in the same way as shown and described in the Chapman patent hereinbefore named. I prefer, however, the following improved construction: The movable jaw B has extending backwardly from it the two side straps 19, which, with the filling-blocks hereinafter described, form a clip for holding the said jaw on the wrench-bar. Extending longitudinally back from the movable jaw B is the ordinary socket portion 21 to receive the screw 9, and extending toward the back edge of the wrench from this socket are the straps 22. Instead of making these straps with inner shoulders to hook over the back edge of the wrench-bar I make said straps straight on their confronting faces, so that the

space between them will admit the wrench-bar without spreading the said straps apart. In order, however, to provide a rigid support for the movable jaw against the back of the wrench-bar, I recess the straps 19 and 22 on their confronting faces, as shown at 23, Fig. 3, and form ribs 24 on the edges of the two filling-blocks 25, that enter the said recesses, as shown. I also connect the said filling-block by means of the connecting-bar 26, as best shown in Fig. 2. The movable jaw B, socket portion 21, straps 19 and 22, and the filling-blocks 25, without the connecting-bar 26, constitute what is generally known as the "wrench-slide." In my wrench I add the connecting-bar to the slide. In addition to the ribs and recesses I further secure the ends of the straps to the filling-blocks by means of the screws 27, Fig. 1. My filling-blocks, which are connected to the straps by a rib-and-recess connection, are assembled with said straps by slipping them endwise into place after the movable jaw and straps are slipped upon the bar. This can readily be done by placing the said blocks and integral connecting-bar on the back of the wrench-bar, with the larger one of the filling-blocks about midway between the two pairs of straps, and then sliding the said blocks longitudinally into place. The screw 9 is pivoted or journaled in the step 8 by means of a screw-pin 30, that extends through the step into a hole (not shown) in the milled head 10 of the screw 9, the same as in the Chapman patent before named. Heretofore the slide has terminated at that edge of the straps 22 that is nearest the step, so that said edges have abutted directly on the milled head of the screw when the slide is drawn fully back. In my wrench the reinforce 18, that extends forward of the notch for the screw-head in the wrench-bar, prevents the slide from moving backwardly far enough to have the edges of the straps bear on the screw-head. In order, therefore, to limit the backward movement of the slide by the screw-head and step at the inner edge of the bar, I form the boss 29 on the socket portion 21 and extend it back of the said straps a distance relatively to the forward end of the reinforce 18, so that the back edge of the slide does not press upon the reinforce when the slide is screwed back.

If desired, instead of making the rivet head or cap 17 integral with the other parts, the handle-web 14 may be formed with a rivet-like projection 17^a, as shown in Fig. 6, so that a cap or washer may be riveted thereon after the handle-scales have been secured in place.

By my improvement the reinforce at the back edge of the bar makes the said bar of full strength at the portion which receives the milled screw-head. The bolster is formed integral with the wrench-bar and step at a point back of the said step sufficiently to be wholly out of the way of the thumb or fingers used to manipulate the milled head of the screw. The conical reinforce at the junction of the bol-

ster and handle-web not only strengthens the wrench at this point in the most efficient manner, but said reinforce is of a form that enables the handle-scales to be fitted thereto by a boring or counterboring tool. The central rib on the handle-web may also be fitted to the handle-scales by a boring-tool, and the combined conical reinforce and rib assist in holding the scales laterally in place.

By connecting the straps and filling-blocks by means of a recess and rib connection I can assemble the parts without bending the straps and at the same time obtain a firm hold for the slide on the back edge of the bar. By providing the two pairs of straps or two clips at the back of the wrench-bar with a connecting-bar, I greatly improve the efficiency of the slide by making it firm and less liable to become bent and to bind on the bar.

It is apparent that some changes from the specific construction herein disclosed may be made, and therefore I do not wish to be understood as limiting myself to the precise form of construction shown and described, but desire the liberty to make such changes in working my invention as may fairly come within the spirit and scope of the same.

I claim as my invention—

1. In a screw-wrench, the wrench-bar having a notch in one edge to receive the milled head of the screw, the said bar having flat parallel sides extending continuously in one plane from the fixed jaw to and beyond the said notch, and a reinforce projecting from the edge of the said bar that is opposite the said notch and extending forwardly a short distance beyond the said notch, substantially as described.

2. In a screw-wrench, the wrench-bar having an integral step, handle-web, and bolster, with a notch in the edge of the bar adjacent the said step, the said bar having flat parallel sides extending continuously in one plane from the fixed jaw to and beyond the said notch, a reinforce projecting from that edge of the said bar which is opposite the said notch and extending forward from the handle-web beyond the said screw-head notch, the said handle-web also projecting beyond the edges of the said bar and in continuation of the projecting edge of the said reinforce, substantially as described.

3. In a combined wrench-bar, step, bolster and handle-web all formed integral, the wrench-bar having its two broad sides extending continuously back of the said step in the longitudinal direction of the wrench, with its said broad sides of a flat form and in the same planes as the contiguous flat sides of the said step, and having the bolster project from the said flat sides of that portion of the wrench-bar which lies adjacent to the step and also merging into the edges of the said portion without projecting from either of the said edges, substantially as described.

4. In a combined integral wrench-bar, step, bolster and handle-web, the handle-web and

bolster having the conical reinforce at their junction, substantially as described.

5 5. In a combined integral wrench-bar, step, bolster and handle-web, the handle-web having the semicircular longitudinal ribs projecting beyond the sides of the said web and adapted to enter correspondingly-shaped longitudinal recesses in the inner faces of the handle-scales, substantially as described.

10 6. In a combined integral wrench-bar, step, bolster and handle-web, the bar and handle-web having the bolster, conical reinforce and semicircular ribs all substantially as described.

15 7. In a wrench having an integral bar and step, the slide having the two pairs of straps, and filling-blocks connected thereto by means of recesses and ribs, substantially as described, whereby the slide and bar may be assembled without bending the straps.

20 8. In a wrench having an integral bar and step, the slide having two pairs of straps, with

a space between their ends for permitting the slide to receive the wrench-bar edgewise between the said ends, the separately-formed filling-blocks for filling the spaces between the said ends of the two pairs of straps and the connecting-bar formed integral with said blocks and extending between the two pairs of straps at the back of the wrench-bar, substantially as described.

9. In a screw-wrench, the wrench-bar having a notch in one edge to receive the milled head of the screw, a reinforce projecting from the edge of the bar opposite the said notch and extending forwardly a short distance beyond the said notch and means for preventing the slide from bearing on the forward end of the said reinforce, substantially as described.

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Witnesses:

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