(No Model.)

E. SHAW.

MODE OF MAKING WRENCHES.

No. 458,797. Patented Sept. 1, 1891.

Fig. 1.

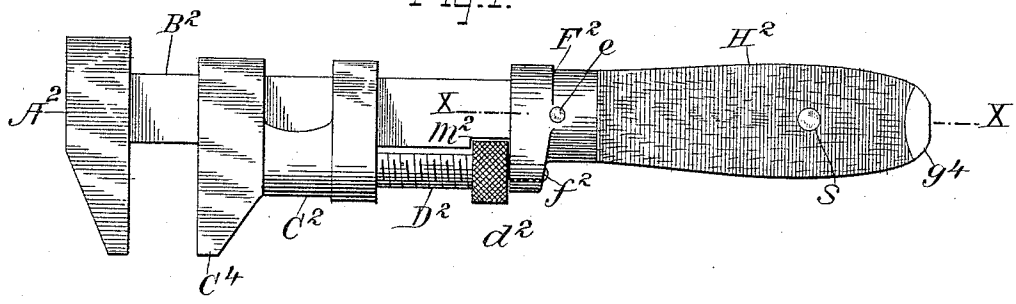


Fig. 2.

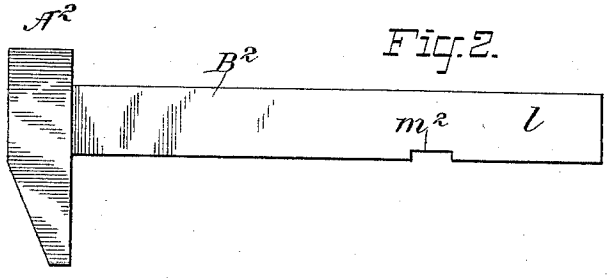
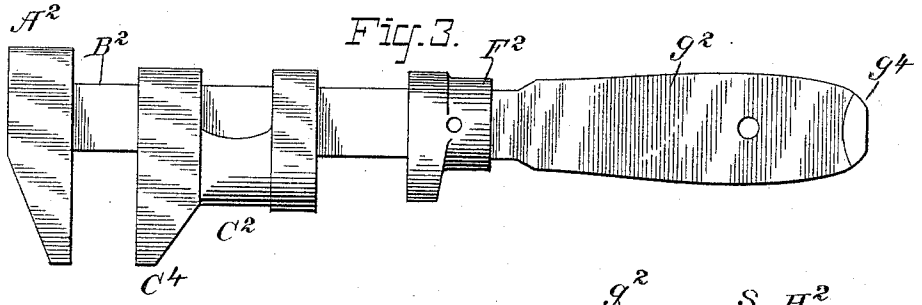


Fig. 3.



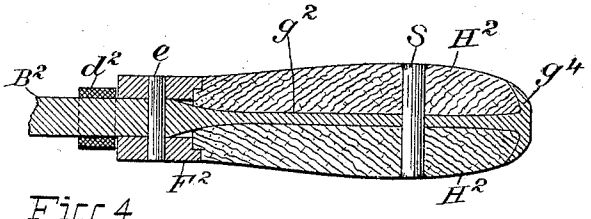


Fig. 4.

ATTEST:

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MODE OF MAKING WRENCHES.

SPECIFICATION forming part of Letters Patent No. 458,797, dated September 1, 1891.

Application filed April 18, 1891. Serial No. 389,466. (No model.)

To all whom it may concern:

Be it known that I, EDGAR SHAW, of Lynn, in the county of Essex and State of Massachusetts, have invented a new Method or Process of Making Slide-Wrenches; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to the manufacture of what are known as "slide-wrenches," (often called "monkey-wrenches,") and especially to that species of such wrenches in which the handle is composed of wood, or some other non-metallic material, through which extends longitudinally some sort of tang-like extension of the bar of the wrench. As heretofore made, wrenches of this species have usually had the handle composed of a single piece of wood, having a hole running centrally through it lengthwise and a rod-like tang or central extension of the bar passing through said hole, the slightly protruding end of the tang being threaded, and a cap-nut being screwed thereon to clamp the wooden handle endwise between said nut and the ferrule-like device, against which the inner end of the wooden handle has been seated.

I have devised a novel construction of wrench of the species alluded to, in which the handle is composed of a flattened or plate-like extension of the bar and wooden scales, arranged one on each side of said extension or tang of the wrench-bar, the said scales being confined endwise between the cap-like head formed on the end of said tang, and the outer end of the ferrule-like device of the wrench, and this novel construction of wrench I have made the subject of another application filed simultaneously with this one.

The invention made the subject of this application consists in the novel method or process of manufacture by which I produce a wrench embodying the structural features made the subject of my said application on the improved article, which novel method will be found fully described hereinafter, and will be more specifically pointed out and defined in the claim of this specification.

To enable those skilled in the art to understand and practice my present improvement in the method or art of making a wrench, such as hereinbefore alluded to, I will now proceed to more fully explain my invention, referring by letters to the accompanying drawings, which form part of this specification.

In the drawings I have shown precisely such a wrench as is made the subject of my other application for Letters Patent, and I have also illustrated the process of manufacture (of such a wrench) that is made the subject of this case.

Figure 1 is a side view of a finished wrench made according to my present invention. Fig. 2 is a side view of the bar and its head constituting the fixed jaw, as this part of the wrench appears, preparatory to the operation of drawing out the end of the bar, to form the handle-tang. Fig. 3 is a side view showing the shape and condition of the finished bar and its integral handle-tang or drawn-out extension, and the sliding jaw and ferrule, assembled with the bar, but the latter not yet adjusted to and secured in its normal or final position on the bar. Fig. 4 is a partial or detail section at the line x x, Fig. 1.

In the several figures the same part will be found always designated by the same letter.

A^2 is the stationary jaw or head forged on one end of the bar B^2, about as usual, and C^2 is the movable jaw-frame with its usual jaw C^4, arranged to slide freely on the bar B^2 in about the ordinary manner. This bar has a recess milled in one edge or side, as seen at m^2, to form a shoulder for engagement with one side of the head d^2 of the usual rosette-screw D^2, which latter, as shown, engages, as usual, with the nut or female screw cut in the frame C^2, and has its centrally-recessed head d^2, journaled on the projecting end of a screw f^2, that is mounted in the laterally-projecting portion of the ferrule F^2.

g^2 is the plate-like extension or tang of the bar, and H^2 are the wooden scales or handle-pieces, which are fitted and secured by a cross-rivet or pin s to the tang g^2, and the inner and outer ends of which respectively are overlapped by the ferrule F^2 and the cap-like head g^4 of the tang.

To produce a wrench of the improved kind shown according to my novel method or process of manufacture, I first make the bar B^2

in the form seen at Fig. 2, with its jaw or head A^2, and after this piece or part shall have been subjected to the necessary milling-machine operations, to slab off the four sides of the bar, cut the recess m^2, and otherwise finish up the part for final use, I assemble with this part the finished-up jaw-frame and sliding jaw $C^2 C^4$, and also the completed ferrule-like device F^2, after the fashion illustrated at Fig. 3—that is to say, after having gotten the sliding-jaw frame and the ferrule entirely finished and all the machine-work done on the bar and its jaw I assemble these parts, as shown at Fig. 3, pushing the sliding parts $C^2 C^4$, and also the ferrule F^2, well along toward, or as near as possible to, the jaw A. I then place the end l of the bar B^2 under a power-hammer and draw out and shape the surplus stock at the vicinity of this end of the bar into a flattened tang or plate-like extension, which plate-like extension has its extreme end upset and formed into a cap-like head g^4, and is given its final and accurate shape or contour in a hot press. After having thus shaped and finished up the tang g^2, I slide the ferrule F^2 toward the root of the tang, and after having placed in position the rosette-screw D^2, I then secure the ferrule in place on the bar by means of a pin or rivet, as seen at *e*. The head of the assembled rosette-screw is then journaled on the teat-like portion of the inserted ferrule-screw f^2, and the tool is completed by placing in position the wooden scales H^2 and securely fastening them to the tang g^2 by a cross rivet or pin *s*, all as plainly shown in the drawings.

It will be seen that by this method or process of manufacture I am enabled to make a wrench of the type alluded to, in which the handle is composed partially of a tang that is integral with that end of the bar which the ferrule-like device (necessary to be located at the inner end of the handle) has to encircle, and that is enlarged beyond the width of that part of the bar which the ferrule must fit, so that it conforms to the size and contour of the wooden scales necessary to form (with said tang) a handle of convenient size and shape.

It will be seen that by the use of the described method or process of manufacture any other tool or implement than a wrench might be produced in which it might be desirable to have a strong, simple, and durable handle, composed of a tang or plate-like device, integral with the metallic bar to be handled, and scales applied to each side of such tang and encompassed at their inner ends by a ferrule-like device having a central opening of less width than that of the tang and its attached scales or handle-pieces, and that, therefore, my present invention, though especially designed for and adapted to the manufacture of wrenches of the type alluded to, might be utilized in the production of other tools similar, as to their handle portions, to the improved wrench herein shown.

Having now so fully explained my improved method or mode of manufacture of wrenches that those skilled in the art can understand and practice my invention, what I claim as new, and desire to secure by Letters Patent, is—

As a novel method or process of manufacture of wrenches and analogous tools, first assembling the bar and those parts which are perforated for the reception of and through the perforations of which one end of said bar is passed, and then swaging out that end of said bar around and over which said assembling parts were passed to form a tang of proportions such as would not permit the assemblage of the parts after the formation of such tang, all substantially in the manner hereinbefore set forth.

In witness whereof I have hereunto set my hand this 21st day of March, 1891.

EDGAR SHAW.

In presence of—
JEROME DEWITT,
MAUDE CUSHMAN.