

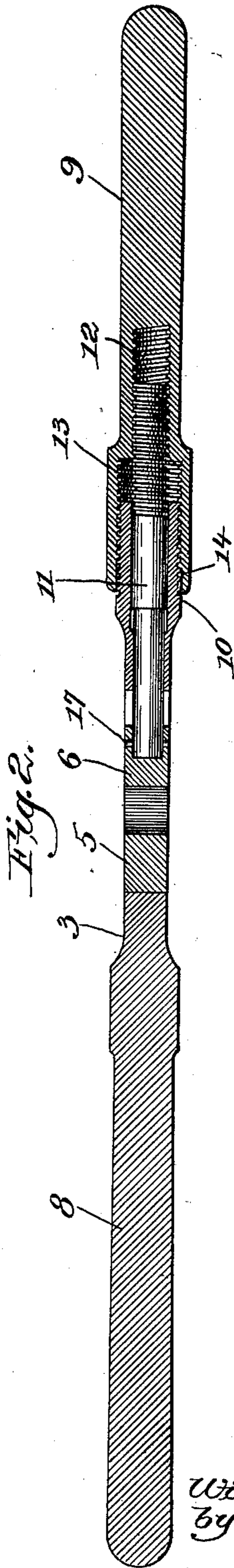
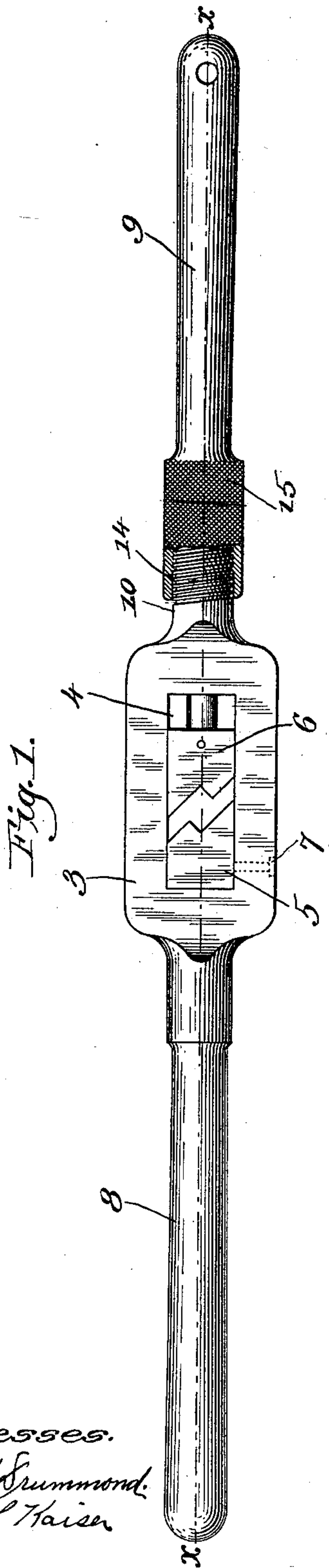
No. 670,899.

W. E. HORSFIELD.
TAP WRENCH.

Patented Mar. 26, 1901.

(Application filed Nov. 1, 1900.)

(No Model.)



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM E. HORSFIELD, OF MANSFIELD, MASSACHUSETTS, ASSIGNOR TO
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TAP-WRENCH.

SPECIFICATION forming part of Letters Patent No. 670,899, dated March 26, 1901.

Application filed November 1, 1900. Serial No. 35,084. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. HORSFIELD, a citizen of the United States, residing at Mansfield, in the county of Bristol and State of Massachusetts, have invented an Improvement in Tap-Wrenches, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

My invention relates to what are known as "tap-wrenches," the same comprising a suitable stock having oppositely-disposed handles attached thereto, one of the handles being rigid therewith and the other having a turning connection with the stock, the said stock supporting the usual fixed and movable jaws between which the shanks of a tap or reamer may be clamped, the movable jaw being operated by a thrust-pin which has a sliding connection with the stock and projects beyond the same to engage a screw-threaded socket in the turning-handle, whereby the turning of the handle operates to open and close the jaws of the wrench. The handle also has a screw-threaded engagement with the stock, the screw-threads on the stock being opposite to those on the thrust-pin, with the result that the longitudinal movement given to the movable jaw from a certain turning motion of the handle is largely increased.

In the drawings, which show the best form of the invention now known to me, Figure 1 illustrates a plan view of the wrench with a portion of the handle broken away; and Fig. 2 is a central section on the line $x x$, Fig. 1.

The stock is represented by 3, it having the usual rectangular opening 4 in the central portion thereof and the usual fixed and movable jaws 5 and 6, supported in said opening, the fixed jaw 5 being locked in place in any usual way, as by a screw 7, and the movable jaw having a sliding motion longitudinal of the opening 5, as usual in this class of devices.

The stock 3 has projecting from it in opposite directions the handles 8 9, the handle 8 being preferably rigid with the stock, while the handle 9 is mounted for turning movement thereon, and suitable means are pro-

vided whereby this turning movement of the handle 9 may be translated into a longitudinal motion of the movable jaw 6. The stock 3 has the neck 10, which is centrally bored to receive for sliding movement the thrust-pin 11, the said thrust-pin being rigidly connected to the movable jaw 6 in any suitable way, as by the pin 17, the said thrust-pin extending some distance beyond the outer end of the neck 10, such extended end being screw-threaded and engaging a screw-threaded socket 12 in the handle 9. The inner end of the handle is counterbored, forming the enlarged socket 13, concentric with the socket 12, the said enlarged socket being sleeved over the neck 10, as illustrated. With this construction it will be obvious that by turning the handle 9 the thrust-pin 11 will be moved longitudinally, thus opening or closing the jaws 5 and 6, and in order to increase this longitudinal movement for a certain turning motion of the handle 9 I provide the neck 10 with exterior screw-threads opposite to those on the thrust-pin 11 and provide the socket 13 with interior screw-threads cooperating with those on the neck 10, the screw-threads on the neck 10 being in this instance shown as right-hand screw-threads and those on the thrust-pin being shown as left-hand screw-threads. With this construction by turning the handle 9 it is given a longitudinal motion with reference to the stock 10 and at the same time the thrust-pin and movable jaw is given a longitudinal motion with reference to the handle and in the same direction as that of the handle, the result being that the total longitudinal motion given to the movable jaw is the sum of the longitudinal movement of the handle on the stock and of the thrust-pin with reference to the handle.

The extreme inner end of the socket 13 may be smooth, if desired, as at 14, this smooth portion acting as a protector to the threads on the neck 10 when the handle is turned to open the jaws.

From the above description it will be seen that my tap-wrench is constructed of few parts, the construction being such that all of the screw-threaded parts are protected and cannot, therefore, get out of order.

If desired, the handle 9 may be provided with the milled portion 15 in order to better grasp the same.

5 Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As an article of manufacture, a tap-wrench comprising a stock having an exteriorly-screw-threaded neck provided with a central bore, fixed and movable jaws in said stock, a thrust-pin rigidly connected to the movable jaw and slidingly sustained in said bore, said thrust-pin projecting beyond the end of the stock and having screw-threads on its projecting end opposite to those on the neck of the stock, and a handle having concentric, interiorly-screw-threaded sockets engaging the neck and thrust-pin respectively, whereby when the handle is rotated the movable jaw is operated.

2. A tap-wrench comprising a stock having

an exteriorly-threaded neck, provided with a central bore, a handle having in its end a threaded socket engaging said neck, a movable jaw held for sliding movement in the stock, a thrust-pin rigid with said movable jaw and slidingly sustained in the bore in the neck, the end of said thrust-pin being provided with screw-threads opposite to those on the neck of the stock, the said screw-threads engaging a screw-threaded socket in the handle, the said screw-threaded socket, which engages the thrust-pin, being concentric with but smaller than the screw-threaded socket which engages the neck of the stock.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM E. HORSFIELD.

Witnesses:

ALMA M. HAGERTY,
MARION H. BARRETT.