

No. 717,479.

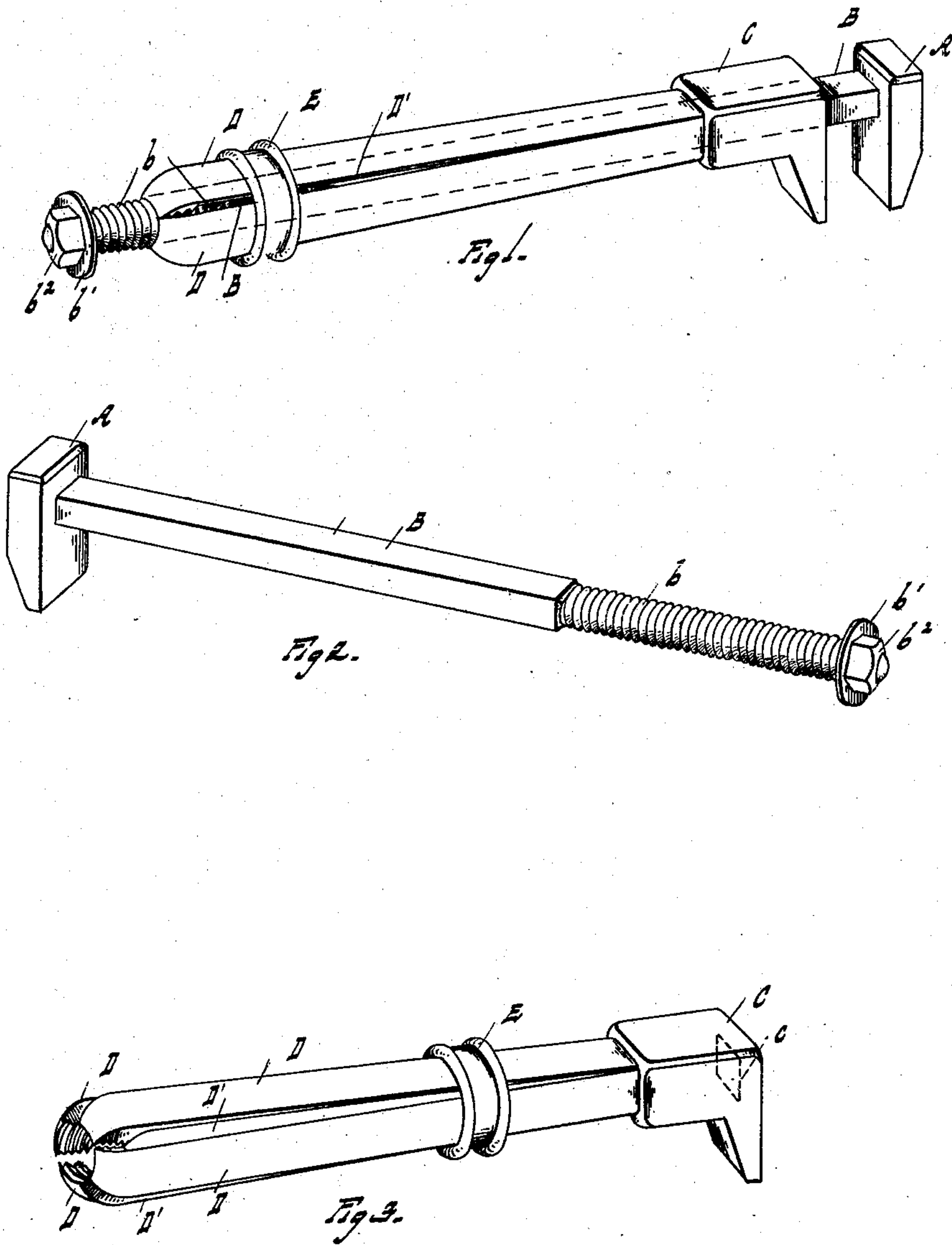
H. A. WESTMORELAND.

Patented Dec. 30, 1902.

WRENCH.

(Application filed June 30, 1902.)

(No Model.)



WITNESSES

Lotta Lee Hayton.
J. H. Maisey

INVENTOR

Henry Arthur Westmoreland
By Parker & Buntin
Attorneys.

UNITED STATES PATENT OFFICE.

HENRY ARTHUR WESTMORELAND, OF CRESWICK, VICTORIA, AUSTRALIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 717,479, dated December 30, 1902.

Application filed June 30, 1902. Serial No. 113,880. (No model.)

To all whom it may concern:

Be it known that I, HENRY ARTHUR WESTMORELAND, a citizen of Great Britain, residing at Creswick, county of Talbot, State of Victoria, Australia, have invented a certain new and useful Improvement in Adjustable Wrenches or Clamps; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates more particularly to wrenches and clamps of analogous character in which there is required means for adjustment, and it is more specially designed to furnish a cheap, simple, and entirely operating means for not only adjusting the wrench to any desired position, but for firmly holding the same in an adjusted position without liability of derangement until it is purposely changed; and it consists in the various arrangements and combinations hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of the wrench as assembled, the jaws being slightly open. Fig. 2 is a perspective view of the upper jaw and shank, showing screw-threads thereon for clamping. Fig. 3 is a perspective view of the interior jaw, combined with means for clamping the same, with reference to the elements shown in Fig. 2, and also having thereon the clamping-ring.

Similar letters refer to similar parts.

In the drawings, A represents the fixed jaw, firmly united with a shank B of any appropriate length and size. The shank has upon its opposite extremity what is preferably a spiral thread in the nature of a screw cut thereon of about sixteen threads to the inch, as shown at *b*, although it will be seen a screw-thread is not essential. A washer *b'* is held by a clamping-nut *b²*, which holds the parts in an adjustable but relatively non-detachable position.

C represents the opposite or movable jaw, which has a perforation therethrough (shown in dotted lines at *c*) and through which extends the shank B in the usual manner. Formed integrally with the jaw C are four spring-leaves D D, somewhat in the nature

of a split tube, and when in a normal position they stand away from or separate from each other a short distance, as is shown by the splits D' D', through which are exposed in Fig. 1 a view of the shank B. Surrounding these spring-leaves is a clamping-ring E, which has a diameter somewhat less than the smallest diameter the leaves can assume when the parts are assembled on the shank B and which also is capable of longitudinal movement upon the sleeves D D, and thus has no effect upon them when it is in the position nearest to the jaw, but which may be slid toward their opposite or free extremities, and thus compress those extremities into a circle of smaller diameter and into engagement with the shank. The extreme end of the sleeves when compressed to their smallest extent forms an opening substantially circular in form and which opening is tapped with a screw-thread or ratchet-thread which corresponds with the thread upon the shank and which, if reduced to the diameter of the shank, is adapted to engage them, and inasmuch as the sleeve cannot turn, owing to the opposite end of the shank being formed of a substantial square cross-section and also the movable jaw being correspondingly formed, it follows that when the free end of the sleeves are compressed into engagement with the threads of the shank the sleeve cannot move thereon without stripping the threads, and thus the movable jaw being rigidly connected with the sleeves is held in a position corresponding to that of the clamp upon the thread upon the shank B. It follows, therefore, and the mode of operation of this device is that when it is desired to open the jaws or set them to any extent within the limits of the instrument by slipping the ring E toward the jaws its compressive effect upon the spring-sleeves is withdrawn. The sleeves then by their elasticity spring outward from their engagement with the threads and the jaws can be instantly moved to the position desired. When in the desired position, the ring E is then slipped into engagement with the spring-sleeve and clamps the extreme ends of the sleeves into engagement with the thread on the end of the shank B, when by reason thereof the jaws are locked in a relative position and cannot be disengaged from that position

without returning the sleeve to its non-engaged position with the spring-clamps, and doing this the jaws immediately spring open and another adjustment can be effected in a
5 similar manner.

It is obvious that the screw-thread upon the shank B need not be in the form of a spiral, but could be in the form of separate
10 grooves or the shank might be partially squared or flattened, leaving grooves at the corners or edges, and with grooves formed to correspond in the grasping portion of the spring-clamps engagement could be effected; but it is more convenient to a screw-thread
15 upon the shank.

The parts are assembled by inserting the shank B into the orifices in the opposite jaw, which is attached to the spring-sleeve, and then by placing the washer *b'* in position and
20 screwing up the end *b*² firmly.

It is obvious that by this construction there are but five pieces in the wrench, that they are all similar and easily made, and are not liable to get out of order.

25 The ring E can be slipped upon the spring-clamps before the insertion of the shank B therethrough, and when the shank B is in position the parts are so adjusted that the ring E cannot be withdrawn entirely from the
30 spring-clamps.

Having thus described my invention, what I desire to claim is—

1. The combination of a jaw, a shank carried thereby, having at its opposite end a se-

ries of spiral grooves, a second jaw having 35 fixed thereto two or more spring-clamps free to engage the grooves, and adapted to disengage themselves therefrom by their resiliency, and a ring encircling the spring-clamps and adapted to compress them into engagement 40 with the grooves by its longitudinal motion thereon, substantially as described.

2. In a wrench, the combination of jaws having a relative movement toward each other, one jaw carrying a ratchet, the oppo- 45 site jaw carrying a spring-clamp, and means whereby the spring-clamp can be forced into engagement with the ratchet and withdrawn therefrom by its resiliency when the clamp is removed, whereby the jaws can be adjust- 50 ed by reference to each other and released therefrom, substantially as described.

3. In a hand-tool, the combination of two jaws, one carrying a shank and the other carrying a spring-sleeve surrounding and in- 55 closing the shank, the spring of the sleeve normally holding the ratchet out of engagement with the shank, and means whereby the sleeve may be compressed upon the shank and into engagement therewith, substantially 60 as described.

In testimony whereof I sign this specification in the presence of two witnesses.

HENRY ARTHUR WESTMORELAND.

Witnesses:

CHAS. A. MURPHY,
A. HOOPER.