

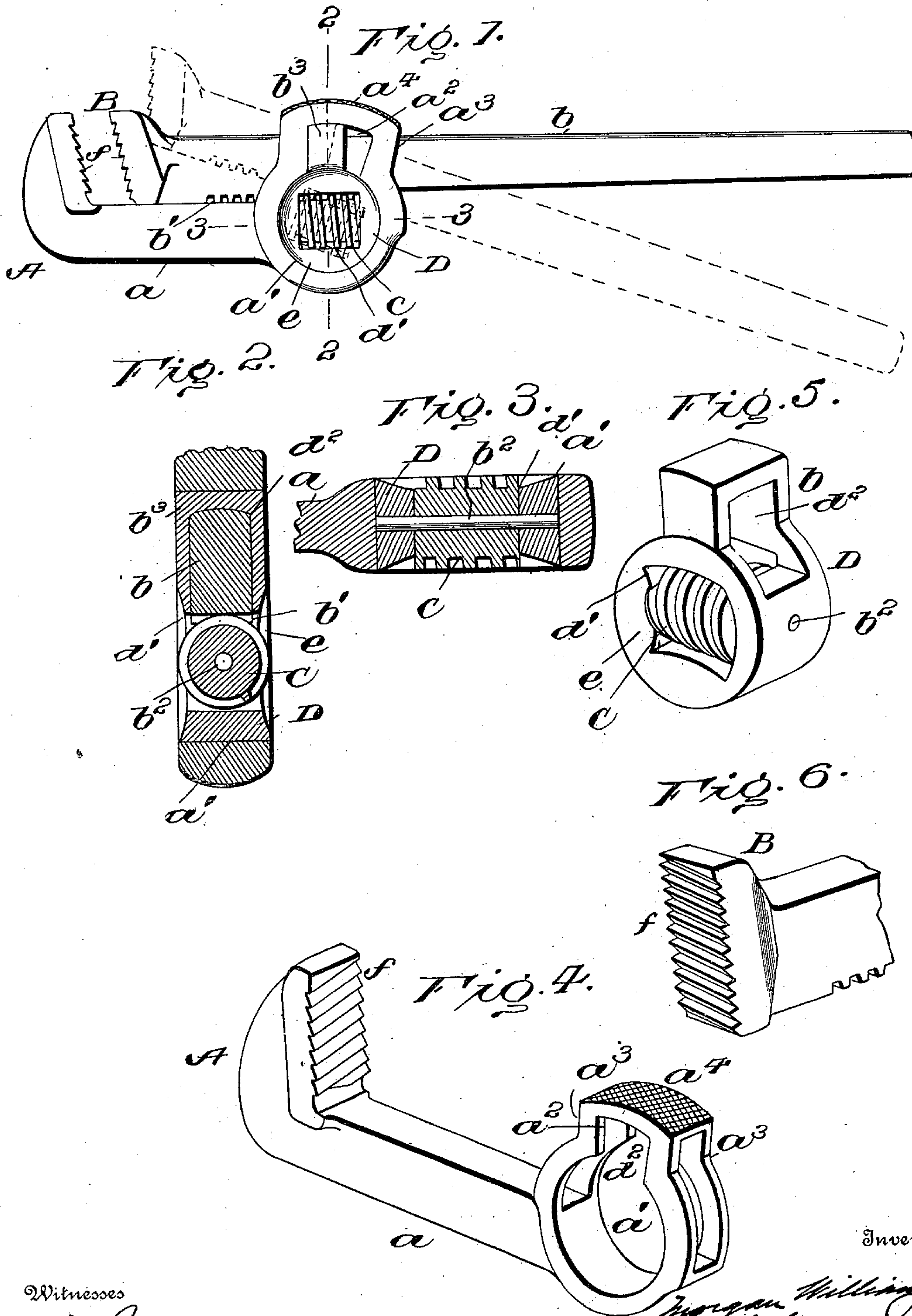
No. 639,640.

Patented Dec. 19, 1899.

M. WILLIAMS.
WRENCH.

(Application filed May 27, 1899.)

(No Model.)



Witnesses

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 639,640, dated December 19, 1899.

Application filed May 27, 1899. Serial No. 718,537. (No model.)

To all whom it may concern:

Be it known that I, MORGAN WILLIAMS, of Aspen, in the county of Pitkin and State of Colorado, have invented certain new and useful Improvements in Wrenches; and I do hereby 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 appertains to make and use the same.

This invention contemplates certain new and useful improvements in pipe-wrenches.

The objects are, first, to provide for the quick opening and closing of the jaws; second, to insure a firm grip of the jaws against the surface with which they are placed in engagement; third, to enable the wrench to be worked on flat surfaces in operating on short nipples or stud-bolts, &c., and, fourth, a wrench composed of a minimum number of parts.

The adjusting-screw for the arm of one of the jaws is mounted in a bearing for such arm, which bearing has a limited axial movement at right angles to that of the screw. The housing in which the bearing is located is open at both sides of the wrench and is of greater width than the screw. The engaging edges of the two jaws are set diagonally across the jaw-faces.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation, the inner jaw and the lever-arm being shown in dotted lines out of position. Fig. 2 is a cross-sectional view on line 2 2, Fig. 1. Fig. 3 is a sectional view on line 3 3, Fig. 1. Fig. 4 is a view of the outer jaw and its arm. Fig. 5 is a view of the screw and its barrel. Fig. 6 shows the engaging end of the inner jaw.

Referring to the drawings, A designates the outer jaw, and a the arm thereof. In the inner end of this arm, the thickness of which is slightly increased, is formed a transverse circular hole a' , which opens into two corresponding slots a^2 of approximately dovetail shape, said slots being in the sides a^3 of the arm a . These sides are extended some distance and are connected at their outer ends by a cross-piece a^4 , the surface of which is preferably milled.

B designates the inner jaw, formed on the end of the lever-arm b . The latter is located within the space between the sides a^3 , and on the edge adjacent to the edge of the arm a is formed with a thread b' .

C is a screw in engagement with the thread b' , and by the turning of which the lever-arm b may be adjusted longitudinally. This screw is axially mounted on a pin b^2 in a barrel D.

This barrel is fitted within the hole a' and has an axial movement at right angles to that of the screw. It forms the bearing for the lever-arm b , and its axial center being below the adjacent edges of the two arms the jaws can be quickly moved into and out of position. This barrel is of circular form, corresponding to the bore of hole a' , and its sides are elongated and connected together to form a tongue b^3 , which travels within the slots a^2 , the ends of the latter forming stops to limit the axial movements of the barrel. A square-shaped opening d' extends transversely through the barrel and at its top is intersected by a second opening d^2 , which accommodates the lever-arm b and a portion of the thread of the screw. The pin b^2 of the latter fits within opposite holes in the barrel and is prevented from falling out by the wall of the hole a' . Both sides of the barrel are depressed or hollowed out, as at e , to enable the screw to be freely engaged by the fingers of the operator and at the same time the outer planes of the barrel and housing are outside of the sides of the screw. By thus positioning the screw the wrench may be worked on a flat surface.

The opposite faces of the two jaws are formed with gripping edges f , which are set at an angle of about ten degrees or fifteen degrees to the planes of the end faces of the jaws, the opposed edges of the two jaws being parallel. This insures a firm grip of the jaws, preventing slipping and avoiding the necessity of placing the wrench at an angle, as is often necessary where the edges are set straight across the jaw-faces.

The advantages of my invention are apparent to those skilled in the art. It will be observed, in the first place, that at most the wrench embodies but five parts, none of which is liable to be readily deranged. It will also be observed that the screw always maintains

its engagement with the thread of the lever-arm and that the axial movement of the latter is limited by the stops with which the tongue of the barrel engages. The movement of the lever-arm being on the axis of the barrel, the two jaws can be readily thrown into or out of operative position.

I claim as my invention—

1. A wrench comprising two arms having jaws, means for adjusting one of said arms longitudinally, a bearing for such arm mounted in the arm of the other jaw and having an axial movement, a tongue carried by such bearing, and stops with which such tongue is designed to engage for limiting the movements of the bearing, as set forth.

2. A wrench comprising two jaws having arms, one of which arms is formed with a thread, a bearing for such arm comprising an axially-movable barrel mounted in the arm of the other jaw, a screw engaging such thread carried by said barrel, and a stop to limit the axial movements of the barrel, substantially as set forth.

3. A wrench comprising two jaws having arms, one arm being formed with a housing through which the other arm is passed, an axially-movable barrel also located within such housing, a screw carried by the barrel for engaging a thread on the last-mentioned arm, and a stop for limiting the axial movements of such barrel, as set forth.

4. A wrench comprising an outer jaw having its arm formed with a housing, a barrel located in such housing, a stop to limit the axial movements of the barrel, a screw carried by the barrel, and an inner jaw having its arm provided with a screw-thread designed to be engaged by said screw, substantially as set forth.

5. A wrench comprising an outer jaw the arm of which is formed with a housing hav-

ing a circular bore and an opening transverse thereto, an inner jaw having its arm provided with a screw-thread and extended through such opening, a barrel fitted in the circular bore and having an opening into which such screw-thread projects, and a screw carried by the barrel and engaging such screw-thread, substantially as set forth.

6. A wrench comprising a jaw having its arm formed with a housing, a second jaw having its arm formed with a screw-thread, a bearing for the latter arm mounted in such housing, a stop to limit the movements of such bearing, and a screw carried by the bearing for engaging said thread, said screw being located between the outer planes of said housing, as set forth.

7. A wrench comprising a jaw having an arm formed with a housing, a second jaw having an arm formed with a thread, a barrel fitted in such housing and having two intersecting openings therein, the arm of the second jaw fitting in one of said openings, a screw mounted in the other opening for engaging such thread, and stops for limiting the axial movements of the barrel, as set forth.

8. The combination with the jaw having its arm formed with a housing, such housing having a circular bore and a slot opening thereinto, of the barrel fitted in such bore having a tongue extended into said slot, a screw mounted in said barrel, and a second jaw having an arm formed with a thread and extended through said housing, as set forth.

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

MORGAN WILLIAMS.

Witnesses:

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