

No. 677,529.

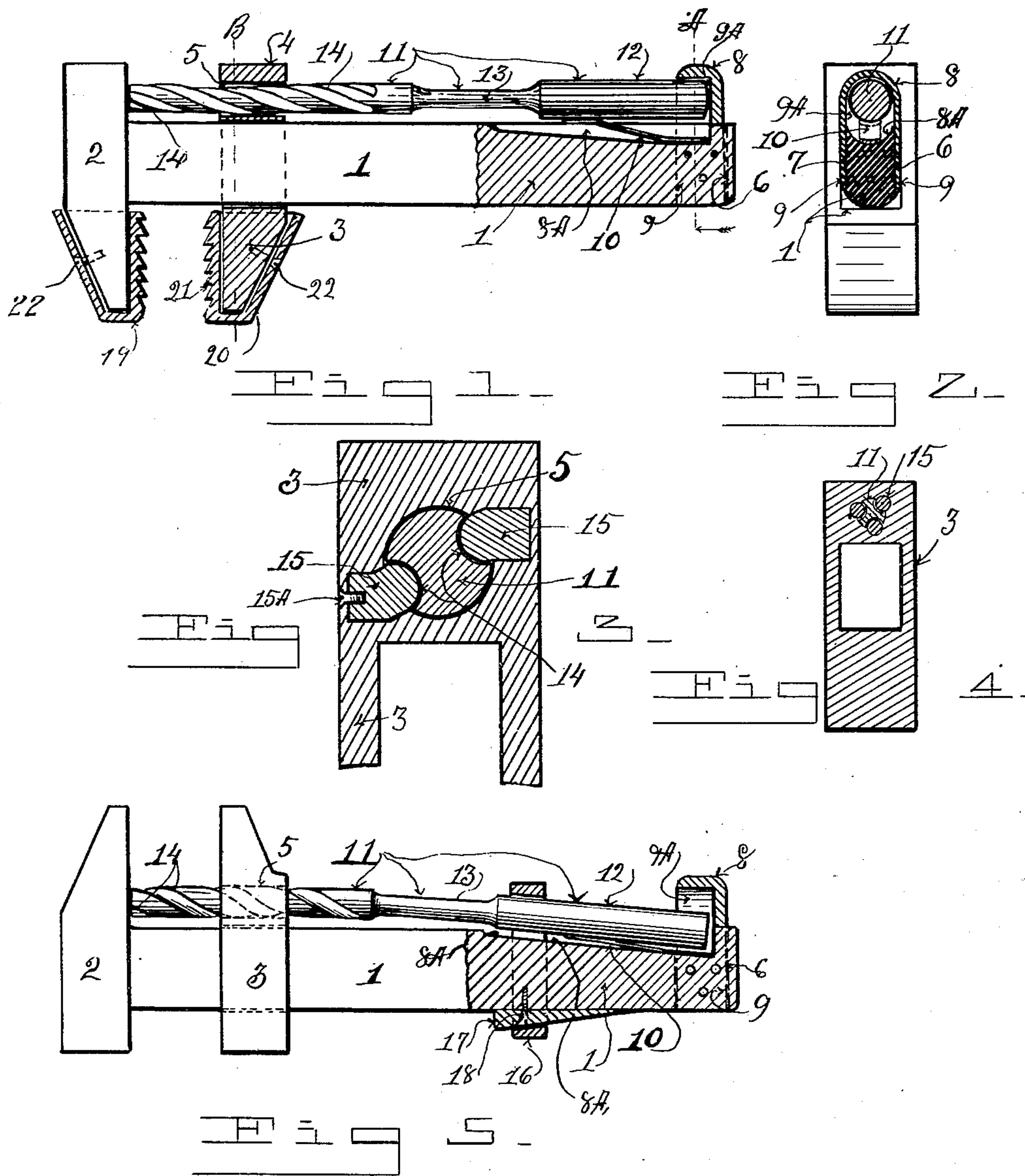
J. J. A. MILLER.

Patented July 2, 1901.

WRENCH.

(Application filed Dec. 4, 1900.)

(No Model.)



WITNESSES:

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 677,529, dated July 2, 1901.

Application filed December 4, 1900. Serial No. 38,661. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. A. MILLER, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Wrenches; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in nut and pipe wrenches; and the objects of my invention are, first, to provide a wrench with a quick-sliding adjustable jaw; second, to provide a wrench having an adjustable jaw that can be clampably locked to the wrench-bar by the pressure of the operator's hand, and, third, to provide a simple, strong, and durable hand-operating wrench. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved wrench, partially in section. Fig. 2 is an end sectional elevation on line A of Fig. 1. Fig. 3 is an enlarged sectional view of the adjustable jaw of Fig. 1 on line B. Fig. 4 is a section of the adjustable jaw, showing a different arrangement of the keys of the locking-rod of the adjustable jaw than that shown in Fig. 3; and Fig. 5 is a side elevation of my improved wrench, showing the handle portion in section and showing a device for locking the adjustable jaw in an adjusted position.

Similar numerals of reference refer to similar parts throughout the several views.

Referring to the drawings, the numeral 1 designates a wrench-bar. A fixed jaw 2 is formed integral with the bar at one end. Upon the wrench-bar I mount an adjustable jaw 3, which is arranged to slide along the bar to and from the fixed jaw. The hammer end 4 of the adjustable jaw is provided with a round hole 5, which is in axial alinement with the wrench-bar. In each side of the handle portion of the wrench-bar recesses 6 and 7 are formed close to the end and opposite one another, in which is a thimble-clip 8, which comprises a thimble portion and bifur-

cated ends 9, which are fitted into the recesses and are secured by rivets to the wrench-bar. The top edge of the wrench-bar along the handle portion is provided with a curved recess 8^A, that slopes from close to the end of the wrench-bar and the inside of the thimble upward toward the adjustable jaw. The thimble is arranged with its open end facing the adjustable jaw. This open end comprises an oblong recess or hole 9^A in the thimble, that extends down to the curved inclined recess in the top edge of the bar. A spring 10 is secured at one end in the bottom of the curved recess in the top of the handle portion, and its opposite end is arranged to bear resiliently against the under side of a locking-rod 11. The end 12 of the locking-rod adjacent to the thimble I call the "handle" end of the locking-rod, and adjacent to this handle portion a short round reduced portion 13 is formed in the locking-rod, which is adapted to allow the handle end to spring down easily from its normal straight position to a curved position against the inclined curved recess in the top of the wrench-bar, as shown in Fig. 5. This locking-rod contains two or three or more spiral grooves 14, two being shown in Fig. 3 and three in Fig. 4. They are arranged equidistant apart around its circumference and extend axially along the rod from its end at the fixed jaw to close to the reduced spring portion. Keys 15 are secured in the adjustable jaw alongside of the hole through which the locking-rod extends. These keys are arranged to extend into the spiral flutes loosely, as shown in Figs. 3 and 4, and effectually lock the rod to the jaw, so that it cannot be turned except by sliding the jaw along the rod and the wrench-bar. The pitch of the spiral groove is made long enough to allow the adjustable jaw to turn the locking-rod as it is moved along the wrench-bar. The keys may be screwed in any convenient manner in the adjustable jaw either by driving them in their keyways or by threading them in or by securing them by a screw 15^A, as shown in Fig. 3.

For small wrenches and light work I preferably construct the wrench as shown in Fig. 1; but for large wrenches and heavy work I preferably add a locking-ring 16, which surrounds loosely the handle of the locking-bar,

as shown in Fig. 5, and also attach a wedge-shaped strip 17 to the lower edge of the wrench-bar, which I secure to the wrench-bar by a screw 18. Both of the jaws are provided with removable pipe-gripping shoes 19 and 20, which are preferably provided with teeth 21. These shoes are made to slip over the jaws and are secured to the jaws by screws 22, which are threaded into each jaw.

The operation of the wrench is as follows: The adjustable jaw can be moved to and fro on the wrench-bar by the operator and is set to engage a nut by the operator sliding the adjustable jaw against it. The jaw is then locked by the operator springing the locking-rod down into the inclined recess in the top edge of the wrench-bar by the pressure of the hand clasped around the handle portion of the wrench-bar and the locking-rod. By springing the rod down by the pressure of the hand it is clamped against the keys and hole in the adjustable jaw and is prevented from turning under the back pressure of the jaw. Upon releasing the locking-rod it will spring back and is held in alinement by the spring 10.

Upon the large wrenches I use the clamping-ring for holding the locking-bar and adjustable jaw, which the operator slides up on the locking-rod after pressing it down, as shown in Fig. 5. The clamping-rod may be placed through either end of the adjustable jaw, as shown in Figs. 1 and 5.

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

1. In a wrench, the combination with the wrench-bar having a fixed jaw at one end, an inclined recess in one of its edges at its opposite or handle end, an adjustable jaw slidably mounted on said wrench-bar, a thimble secured to said handle end projecting above the handle and provided with an oblong hole, a spirally-grooved rod supported at one end in said thimble and extending through said adjustable jaw and keys secured in said adjustable jaw and extending into the spiral grooves of said spirally-grooved rod, substantially as described.

2. In a wrench, the combination of the wrench-bar having a fixed jaw at one end and a handle portion at its opposite end, an inclined recess in its handle and extending upward toward the fixed jaw, an adjustable jaw slidably mounted on said wrench-bar and a hole through said adjustable jaw with a spiral rod extending loosely through said hole provided with spiral flutes, keys secured to said adjustable jaw and extending into said flutes and having one end of said rod rest against said fixed jaw, a thimble secured to the handle end of said wrench-bar and containing an oblong hole extending from the recess in said

wrench-bar to the top of said thimble in which the adjacent end of said rod extends, and a spring secured in said recess and arranged to hold said rod up against the top of said thimble and in alinement with said wrench-bar, substantially as described.

3. In a wrench, the combination with the wrench-bar and the fixed jaw having the handle portion and the inclined recess in said handle portion of the side recesses in said handle portion, the thimble secured in said recesses, the adjustable jaw slidably mounted on said wrench-bar, the spirally-grooved clamping-rod extending through said jaw, the keys in said jaw extending into the grooves of said clamping-rod, the spring secured in said inclined recess and arranged to bear resiliently on the under side of said clamping-rod, substantially as described.

4. In a wrench, the combination of the wrench-bar the fixed jaw at one end of said wrench-bar, the adjustable jaw slidably mounted on said wrench-bar and the handle portion at the opposite end of said wrench-bar having an inclined recess extending upward toward the adjustable jaw, with the thimble, the spirally-grooved clamping-rod having a reduced spring portion adjacent to its spiral portion and supported at one end in said thimble and extending loosely through said adjustable jaw to said fixed jaw, the key secured in said adjustable jaw and arranged to extend loosely into the spiral flutes of said clamping-rod, and the spring secured in the recess of said wrench-bar and arranged to bear against the under side of said clamping-bar, a wedge-shaped strip secured to the opposite edge of said wrench-bar from said recess, and a ring surrounding loosely said handle portion and said wedge strip, substantially as described.

5. In a wrench, the combination with the wrench-bar having a fixed nut or pipe engaging jaw at one end, a handle portion at its opposite end containing an inclined recess extending upward toward said fixed jaw, the thimble secured to said handle end, the spring secured in said recess, and the spirally-grooved rod supported at one end in said thimble and having a spring portion adjacent to the thimble-supported end, an adjustable nut or pipe engaging jaw on said wrench-bar slidably keyed to said spirally-grooved rod, the wedge strip secured to the opposite edge of said wrench-bar from said inclined recess, and the holding-ring surrounding loosely said handle portion of said wrench-bar and spirally-grooved rod, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN J. A. MILLER.

Witnesses:

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CYRUS W. MCARTHUR.