

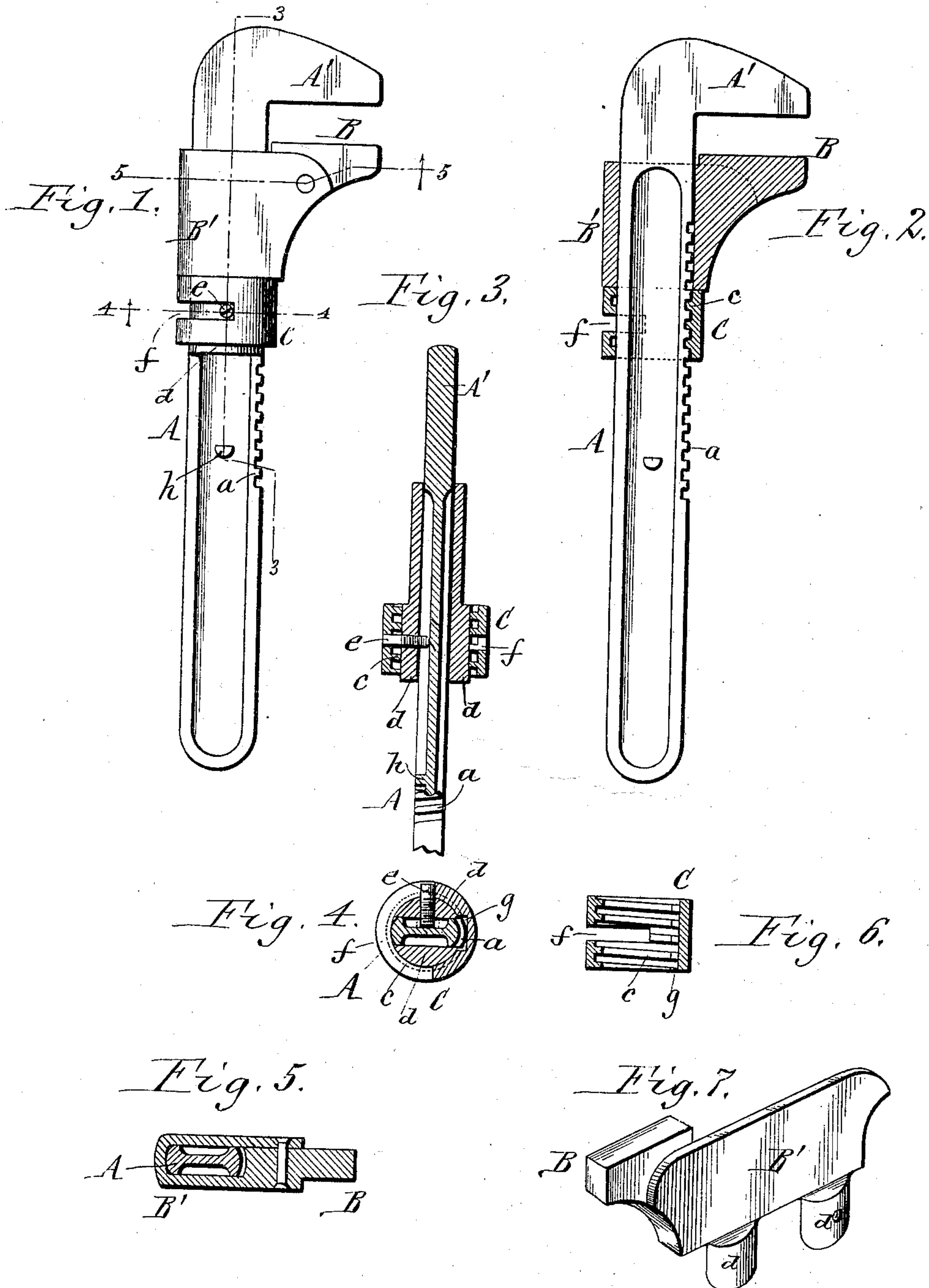
No. 629,045.

Patented July 18, 1899.

A. MCKAIG.
WRENCH.

(Application filed Sept. 10, 1898.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

ARCHIBALD MCKAIG, OF BUFFALO, NEW YORK, ASSIGNOR TO THE MCKAIG-DORNTGE DROP FORGING COMPANY, OF EBENEZER, NEW YORK.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 629,045, dated July 18, 1899.

Application filed September 10, 1898. Serial No. 690,613. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD MCKAIG, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates more particularly to that class of monkey-wrenches in which the movable jaw is adjusted by a rotary screw collar or nut capable of being engaged with or disengaged from a series of oblique teeth or screw-threads formed on the shank which carries the stationary jaw, so that the movable jaw can be quickly adjusted by sliding the same and the screw-collar on the shank and locked in position after adjustment by engaging the collar with the teeth or threads of the shank.

One of the objects of my invention is the provision of a simple connection between the movable jaw and its adjusting-collar, which at the same time serves as a guide for readily indicating the positions of the collar.

Another object of the invention is to improve the construction of the movable jaw with a view of rendering the same strong, inexpensive, and neat in appearance.

In the accompanying drawings, Figure 1 is a side elevation of my improved wrench. Fig. 2 is a sectional elevation thereof. Fig. 3 is a fragmentary vertical section in line 3 3, Fig. 1. Fig. 4 is a cross-section in line 4 4, Fig. 1, looking upward, showing the adjusting-collar unlocked. Fig. 5 is a cross-section in line 5 5, Fig. 1, looking upward. Fig. 6 is a detached vertical section of the adjusting-collar. Fig. 7 is a perspective view of the finished blank of the movable jaw and its strap.

Like letters of reference refer to like parts in the several figures.

A is the shank, which may also form the handle of the wrench, and A' is the stationary jaw, preferably formed in one piece with the shank. The shank preferably has concave or recessed sides and is provided at one edge between its handle portion and the stationary jaw with a series of parallel oblique teeth or partial screw-threads *a*. In the drawings these threads are shown on the front edge

of the shank, but they may be arranged on the rear edge, if desired.

B is the movable jaw, and B' the strap by which it is connected to the shank A. This jaw is composed of a block of the proper width and length to cooperate with the fixed jaw A' and is forged in one piece with the strap, which latter is arranged slightly below the upper face of the jaw, so that the wear and strain resulting from contact with the nut or other part which is grasped falls upon the jaw and not upon the strap. This strap extends from one side of the jaw backwardly across one side of the shank, then around the back of the shank, and then forwardly to and against the opposite side of the jaw, to which the free end of the strap is secured by a transverse rivet or other suitable means. The end of the strap which is forged to the jaw is offset laterally from the side of the jaw to correspond with the offset formed on the opposite side of the jaw by the opposite end of the strap, which is secured against the same. The strap is provided on its under side with two downwardly-projecting lugs or filling-bosses *d*, which are flat on their inner or rear sides and have the form of vertical cylinder-segments on their outer sides. These lugs are so arranged on the strap that when the latter has been bent they will rest with their flat sides against the flat sides of the shank. The jaw and its strap provided with these lugs are forged out of a sheet of flat steel by suitable dies to the form shown in Fig. 7, and the strap is then bent and secured as described.

C is the rotary adjusting collar or nut of the sliding jaw, which is arranged at the lower end of the strap B' and provided with internal screw-threads *c*, which engage normally with the corresponding teeth or threads *a* of the shank for locking the sliding jaw in position. This adjusting-collar turns upon the shank and two convex lugs or filling-bosses *d*, extending downwardly from opposite sides of the strap B' and bearing with their flat inner sides against the flat sides of the shank.

The movable jaw is connected with the adjusting-collar, so as to move lengthwise on the shank therewith, by a pin, screw, or stud *e*, which projects outwardly from one of the

lugs d and enters a horizontal or circumferential slot f , formed in the adjusting-collar, so that the collar, although connected with the sliding jaw, is free to turn to a limited extent independently of the jaw. The collar is provided in its bore with a smooth longitudinal groove or recess g , which interrupts its screw-threads and which is of sufficient depth and width to clear the teeth or threads of the shank when brought opposite or in line with the same, as shown in Fig. 4. When the collar is turned into the last-mentioned position, the same and the movable jaw can be slid lengthwise on the shank for effecting a quick shift or adjustment of the movable jaw, while upon turning the collar so as to bring its groove out of line with the threads of the shank the threads of the collar engage with those of the shank, as shown in Fig. 2, thereby locking the sliding jaw in position.

In the use of the wrench after the unlocked collar has been shifted to bring the sliding jaw against the nut or other flat-sided object to be turned the subsequent turning of the collar locks the jaw against sliding on the shank and also tightens the jaws upon the object, the screw-collar acting as a clamping-nut for the sliding jaw. The slot of the collar is made long enough to permit of the necessary range of rotation to effect this result. This slot is so arranged with reference to the location of the internal groove g of the adjusting-collar that when one of the ends of the slot bears against the stud e the groove registers with the toothed edge of the shank and releases the sliding jaw, as shown in Fig. 4, while when the collar is turned to any other position it is interlocked with the toothed shank. The slot in conjunction with the stud e thus serves both as a coupling between the sliding jaw and its adjusting-collar and as a stop or guide which determines the unlocked position of the jaw. By this provision no special attention is required to release the sliding jaw; but it is only necessary to turn the adjusting-collar in the proper direction until it is stopped by the end of its slot striking the stud, when the jaw will be unlocked.

As shown in the drawings, the lugs d of the strap B' are formed in one piece with the strap and the movable jaw.

In order to prevent the movable jaw from sliding off the shank, the latter is provided in one of its recessed or concave sides, near the lower end of its series of teeth, with a stop h , against which the inner end of the screw or pin e strikes.

I claim as my invention—

1. The combination with the shank of the wrench carrying the stationary jaw and provided along one edge with teeth, of a sliding jaw arranged on said shank and provided with a lateral coupling projection, and a rotary internally-threaded collar which surrounds said shank and movable jaw and is provided with a circumferential slot in which said projection engages and with an internal

longitudinal groove which mutilates the screw-thread and which receives the teeth of the shank when the coupling projection stands in one end of the slot, in which position of the parts the movable jaw can be freely moved on the shank, while the thread of the collar engages with said teeth of the shank in turning the collar out of this position and until the other end of the slot strikes the coupling projection, thereby moving the movable jaw by the screw-thread of the collar and also holding the jaw in its adjusted position, substantially as set forth.

2. The combination with the shank of the wrench carrying the stationary jaw and provided along one edge with teeth, of a sliding jaw surrounding said shank and terminating in two lugs having convex outer sides and resting with their flat inner sides against opposite sides of the shank, a rotary internally-threaded collar which surrounds said shank and the lugs of said movable jaw and which is provided with an internal longitudinal groove which mutilates the screw-thread and receives the teeth of the shank when the collar is disengaged from the same and with a circumferential open slot, and a coupling-pin which is secured at its inner end to one of the lugs of the movable jaw and engages with its outer end in said slot, substantially as set forth.

3. The combination with the toothed shank of the wrench having a concave or recessed side containing a stop, of a movable jaw sliding on the shank, a rotary adjusting-collar surrounding the shank and having a circumferential slot or recess and interrupted internal screw-threads adapted to engage with the teeth of the shank, and a combined coupling and stop pin projecting from the movable jaw into said slot and the recessed side of the shank and adapted to strike against the stop of the shank, substantially as set forth.

4. The combination with the shank and the fixed jaw secured thereto, of a movable jaw having a continuous face by which it coöperates with the fixed jaw and formed in one piece with a strap which extends from one side of the movable jaw rearwardly across one side of the shank, then around the back of the shank, and then forwardly to the other side of the jaw against which the end of the strap is secured, substantially as set forth.

5. The combination with the shank and the fixed jaw secured thereto, of a movable jaw having a continuous face by which it coöperates with the fixed jaw and formed in one piece with a strap which is arranged below the face of the movable jaw and which extends from one side of the movable jaw rearwardly across one side of the shank, then around the back of the shank, and then forwardly to the other side of the jaw against which the end of the strap is secured, substantially as set forth.

6. The combination with the shank and the fixed jaw secured thereto, of a removable jaw

having a continuous face by which it coöperates with the fixed jaw and formed in one piece with a strap which extends from one side of the movable jaw rearwardly across
5 one side of the shank, then around the back of the shank, and then forwardly to the other side of the jaw against which the end of the strap is secured, said strap having two downwardly-extending segmental lugs arranged to

rest against the sides of the shank, substantially as set forth.

Witness my hand this 30th day of August, 1898.

ARCHIBALD MCKAIG.

Witnesses:

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