No. 722,483. PATENTED MAR. 10, 1903.

J. A. BOYD.

WRENCH.

APPLICATION FILED DEC. 9, 1902.

NO MODEL.

Fig. 1.

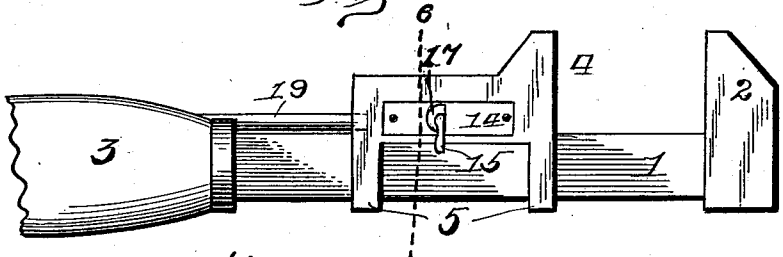


Fig. 2.

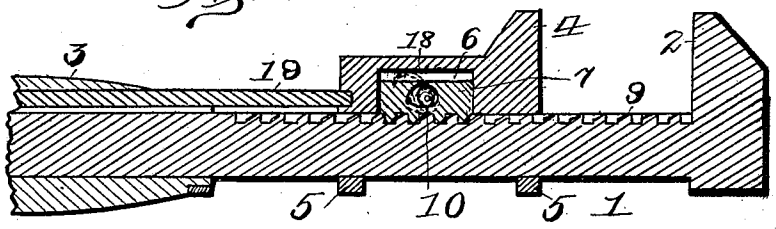


Fig. 3.

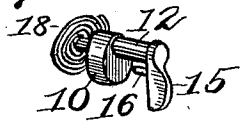


Fig. 4.

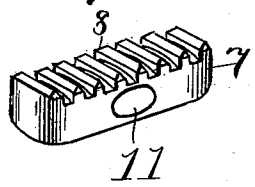


Fig. 5.

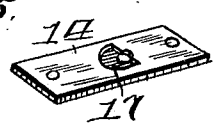
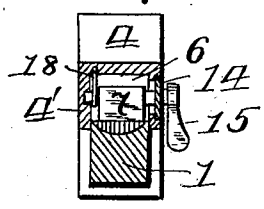


Fig. 6.



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UNITED STATES PATENT OFFICE.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 722,483, dated March 10, 1903.

Application filed December 9, 1902. Serial No. 134,550. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. BOYD, a citizen of the United States of America, residing at Webster, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in wrenches, and particularly to that type known as "monkey-wrenches;" and the primary object of the invention is to provide novel and effective means for the rapid and easy adjustment of the sliding or movable jaw.

The invention resides in the peculiar construction and arrangement of parts and features and in certain parts thereof, substantially as illustrated and as set forth hereinafter.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a detail side elevation of my improved wrench, the handle being partly broken away. Fig. 2 is a central longitudinal sectional view of the same. Fig. 3 is a detached detail perspective view of the locking-cam, its shaft, handle, and spring. Fig. 4 is a detail perspective view of the movable locking-rack. Fig. 5 is a like view of the side plate, to which is attached the sliding or movable jaw. Fig. 6 is a transverse vertical sectional view taken on the line 6 6 of Fig. 1.

Referring to the accompanying drawings, 1 indicates the shank of the wrench, having at one end the fixed jaw 2 and at the other end the handle 3. The movable jaw 4 is slidably mounted upon the shank and capable of being moved the entire length thereof between the fixed jaw and the handle, which forms stops to prevent loss of the movable jaw. The slidable jaw 4 is provided with keepers 5, through which the shank 1 extends, and this jaw has at its one side an oblong recess 6, in which is mounted for lateral movement the locking-rack 7. This locking-rack 7 is provided at its underneath face, throughout the length thereof, with teeth 8, which are beveled or inclined on their one face, and these teeth are adapted to mesh with teeth 9, formed on the inner face of the shank 1, said teeth of the shank also having a beveled or inclined face. The teeth 9 are preferably not extended the entire width of the shank, and by inclining or beveling the one face of the teeth it will be observed that the sliding jaw 4 may under pressure be readily forced toward the fixed jaw 2, but cannot be forced backward toward the handle until its locking means is disengaged. The locking-rack 7 is engaged with the teeth 9 and held in engagement therewith by means of the cam 10, which operates in the elliptical opening 11, provided therefor and extending transversely of the locking-rack 7. The cam 10 is carried on the shaft 12, which at its inner end is journaled in the side wall 4′ of the sliding jaw, and its outer end is journaled in the removable plate 14, suitably attached to the sliding jaw, being countersunk in the face of said jaw, so that it may be flush therewith. The outer end of the shaft 12 carries a handle 15, provided with a small pin 16, which acts as a limit or stop to the rotary movement which may be imparted to the handle and shaft and upon traveling in the semicircular recess 17, provided therefor in the outer face of the cover-plate 14. The ellipse, which acts as a cam to hold the locking-rack in engagement with the teeth 9, is normally under the tension of a band-spring 18, connected at its one end to the shaft 12, near the inner end of the latter, with its other end suitably attached to the sliding jaw. When the ellipse is turned so that its greater diameter will be transverse of the wrench-shank, the locking-rack 7 will be firmly held in engagement with the teeth 9, and when the handle is turned partially around, so as to operate the ellipse to bring the larger diameter thereof longitudinal with the elliptical opening 11, the locking-rack will be moved upward in the recess 6, disengaging the teeth of the rack from those of the wrench-shank, allowing the latter to be adjusted toward or away from the rigid jaw 2 to accommodate different-sized nuts. Connected to the back of the sliding jaw 4 is a rod 19, which telescopes into the handle 3, serving to guide the rigid jaw and partly relieve any lateral strain from the keepers 5 thereof.

While I have illustrated and described a practical embodiment of my invention, yet it will be observed that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a wrench, the combination with the shank having a fixed jaw and a toothed rack, of a movable jaw slidably mounted upon the shank and provided in one side with a recess, a locking-rack mounted in said recess for lateral movement therein and provided with openings extending transversely through the rack, a shaft journaled in the sliding jaw, a cam mounted on said shaft and lying within the elliptical opening in the locking-rack, a handle carried by said shaft, and a spring connected to the shaft of the jaw, as and for the purpose described.

2. In a wrench, the combination with a shank having a fixed jaw and a toothed rack, of a movable jaw slidably mounted upon the shank, a rod carried by the rear end of said jaw and telescoping in the handle carried by the shank, a locking-rack mounted for movement in the slidable jaw transversely of the shank and provided with openings extending transversely therethrough, a shaft journaled in the jaw and having a cam within the opening of the locking-rack, a handle carried by said shaft, and means for limiting the rotary movement imparted to the shaft, substantially as described.

3. In a wrench, the combination with a shank having a fixed jaw and a toothed rack, of a movable jaw slidably mounted on the shaft and provided in one side with a recess, a locking-rack having teeth provided with inclined faces to engage with the teeth of the shank, a cam mounted within the locking-rack, and means for normally holding the locking-rack in engagement with the toothed rack in the shank, substantially as described.

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

JOHN A. BOYD.

Witnesses:
J. A. LOHMAN,
G. M. MITCHELL.