R. H. WATERS.

WRENCH.

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1,072,283. Patented Sept. 2, 1913.

Fig. 1

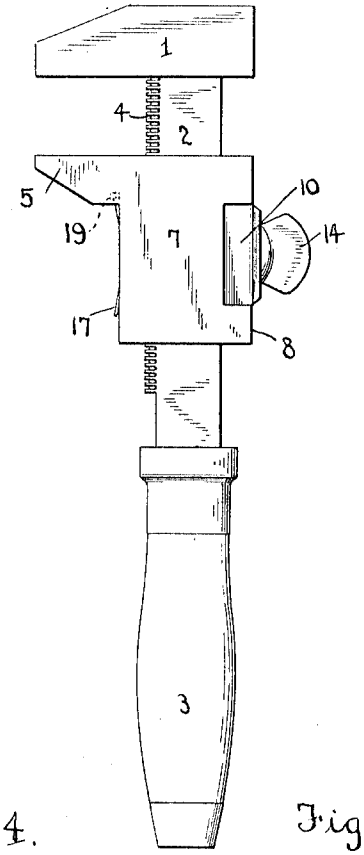


Fig. 2.

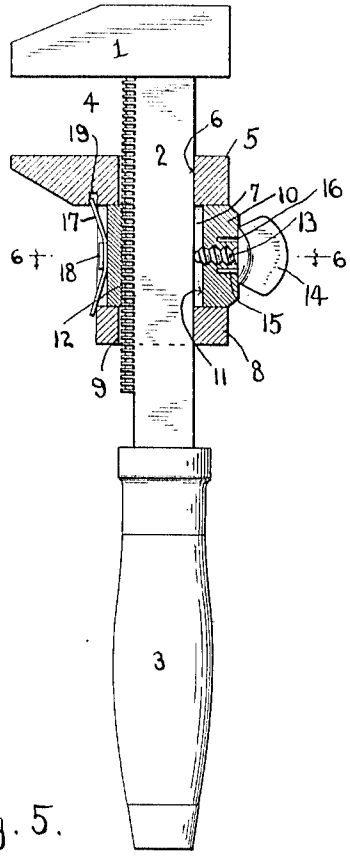


Fig. 3.

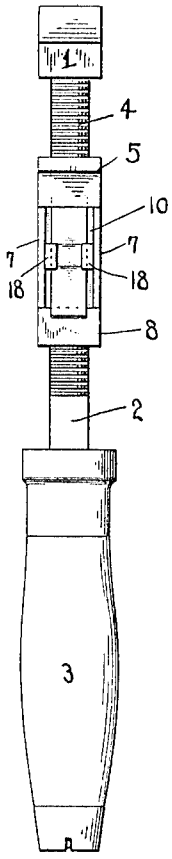


Fig. 4.

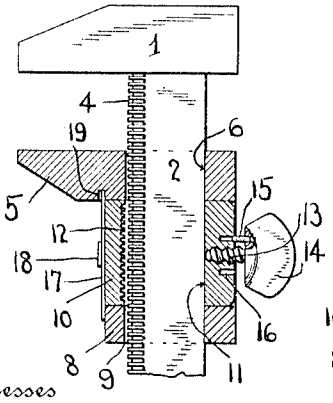


Fig. 5.

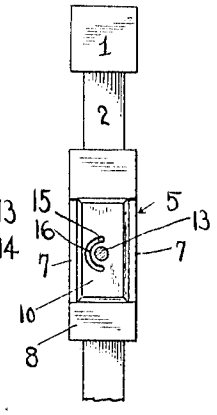
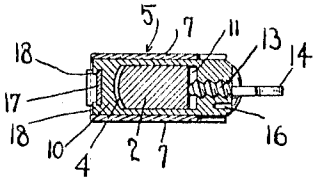


Fig. 6.



Witnesses

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WRENCH.

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To all whom it may concern:

Be it known that I, RICHARD HENRY WATERS, a citizen of the United States, residing at Rosebud, in the county of Falls and State of Texas, 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.

This invention relates to improvements in wrenches and particularly to monkey wrenches.

One object of the invention is to provide a monkey wrench having an improved construction and arrangement of adjustable jaw and improved means for locking the latter in its adjusted position and quickly releasing the same for readjustment.

Another object is to provide a monkey wrench which will be simple, strong and durable in construction, efficient and reliable in operation and which may be constructed in all sizes for light or heavy work.

With these and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings: Figure 1 is a side view of my improved wrench; Fig. 2 is a similar view with the adjustable jaw and its locking mechanism in vertical section and illustrating the locking mechanism in operative position; Fig. 3 is a front edge view of the wrench; Fig. 4 is a detail side view of the fixed jaw and shank and a longitudinal sectional view of the adjustable jaw and its locking mechanism showing the latter in released or inoperative position. Fig. 5 is a rear edge view of the outer portion of the wrench with the lock operating screw in section; Fig. 6 is a cross sectional view taken on the line 6—6 of Fig. 2.

My improved wrench comprises an outer jaw 1 fixed on the outer end of a shank 2 to the inner end of which is secured in any suitable manner a handle 3. On the front edge of the shank 2 are formed rack teeth 4 with which is adapted to be engaged the locking mechanism for the adjustable jaw hereinafter described.

Slidably mounted on the shank 2 is an adjustable jaw 5 having therein a rectangular passage 6 which is of slightly greater size than the size of the shank 2 engaged therewith. On the inner end of the jaw 5 is formed an inwardly extending lock casing 6 comprising side plates 7 which are integrally connected at their inner ends with a guide block 8 which forms the inner end of the casing and which has therein a passage 9 corresponding in size and shape to the passage in the jaw 5 and through which the shank 2 also passes.

Slidably mounted in the lock casing 6 is a locking bolt or block 10 having therein a longitudinal passage 11 which corresponds in width to the thickness of the shank 2 and has a length slightly greater than the width of the shank and the rack teeth thereon as shown. The locking block or bolt 10 has a close sliding engagement at its ends with the inner sides of the jaw 5 and guide block 8 and at its sides with the side plates 7 of the lock casing. In the front end of the passage 11 of the block 10 adjacent to the rack teeth 4 are formed corresponding and co-acting rack teeth 12 which, when the lock or bolt is in an operative position engage the rack teeth 4 on the shank 2 and thereby lock the jaw 5 in its adjusted position. The block or bolt 10 is actuated to bring the teeth 12 thereof into operative engagement with the teeth on the shank 2 by a bolt operating screw 13 having a coarsely threaded shank which is engaged with a coarsely threaded screw hole in the rear portion of the block or bolt 10 as shown. The screw 13 is provided with a flat operating head 14 and the inner end of the shank of the screw is adapted to engage the outer edge of the shank 2 whereby when the screw is turned in the proper direction the locking block or bolt will be drawn outwardly and the toothed edge of the passage brought into engagement with the rack teeth of the shank 2 thereby locking the adjustable jaw in its adjustable position as clearly shown in Fig. 2 of the drawing. The threads of the screw 13 are of such steep pitch that a slight turn of the screw in the proper direction will be sufficient to retract the bolt or block 10 far enough to bring the teeth thereon into operative engagement with the teeth on the shank. In order to limit the movement of the screw when the latter has been turned far enough to bring the teeth of the block into engagement with the teeth on the shank, I preferably provide a stop pin 15 which is secured in the

head of the screw and projects inwardly therefrom into engagement with a segmental groove 16 formed in the outer side of the jaw or bolt as shown.

In order to disengage the teeth of the bolt or block 10 from the teeth of the shank 2 when the screw 13 is turned to a released position, I provide a flat bolt retracting spring 17 which is secured midway between its ends in clenching lugs 18 formed on the inner edge of the bolt or block 10 and having one end engaged with a notch 19 in the inner side of the jaw 5 and its opposite end engaged with the adjacent end of the guide block 8 forming the inner end of the lock casing. By thus arranging the spring 17 it will be seen that when the locking bolt or block 10 is retracted by the screw 13, said bolt will be moved against the resistance of the spring 17 as clearly shown in Fig. 12 of the drawings and when the screw is turned in the proper direction for releasing the bolt or block, the latter will be drawn back in the opposite direction thereby disengaging the teeth thereof from the teeth of the shank 2 which will permit the jaw 5 to be adjusted in either direction with respect to the fixed jaw 1.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is:

In a wrench, the combination with a shank having a fixed jaw at one end and a handle at the other, and teeth on its front edge, a movable jaw slidably mounted on said shank, and a guide block also slidable thereon and connected with said movable jaw by side plates; of a hollow locking bolt loosely mounted on said shank between the movable jaw and its guide block and having teeth on the inner face of its front wall and a threaded aperture through its rear wall and a segmental groove in the outer face of the latter concentric with said aperture, a screw mounted in the aperture and having an enlarged head, a stop pin under the head engaging said groove, lugs on the front face of the front wall, and a leaf spring held at its mid-length beneath said lugs with its lower end overlying the front end of said block, the inner side of the movable jaw having a notch in which the upper end of said spring is seated.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RICHARD HENRY WATERS.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."