

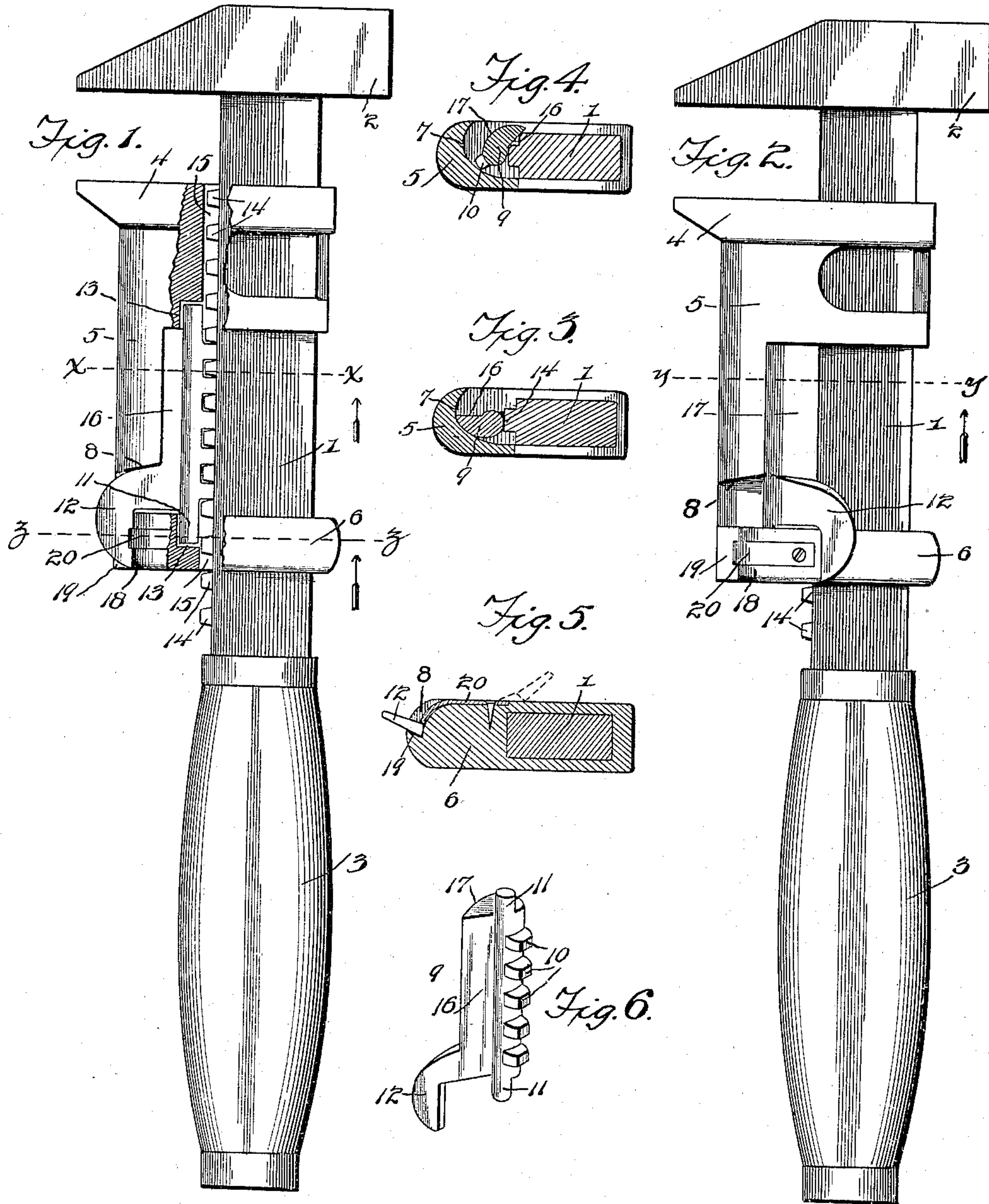
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J. H. FLANIGAN.
WRENCH.

(Application filed May 1, 1899.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 639,369, dated December 19, 1899.

Application filed May 1, 1899. Serial No. 715,178. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. FLANIGAN, a citizen of the United States, residing at Town Creek, in the county of Lawrence and State of Alabama, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to sliding-jaw wrenches which have an adjustable interlocking engagement with the shank thereof and which will permit of the movable jaw being quickly moved to different adjustments.

The object of the invention is to provide means whereby the movable jaw may be more firmly clamped upon the object to which it is applied after the approximate adjustment has been obtained; and a further object is to provide a positive interlocking engagement of the jaw with the shank.

To these ends the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of the wrench, showing the movable jaw locked. Fig. 2 is a similar view showing the jaw released. Fig. 3 is a transverse sectional view on the line xx , Fig. 1. Fig. 4 is a transverse sectional view on the line yy , Fig. 2. Fig. 5 is a transverse sectional view on the line zz , Fig. 1. Fig. 6 is a detail perspective view of the locking-cam for the movable jaw.

Corresponding parts are designated by like reference characters in all the figures of the drawings.

Referring to the accompanying drawings, 1 designates 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 form stops to prevent loss of the movable jaw. The latter has a pendent arm 5, which is provided with a yoke-shaped slide 6, embracing the shank of the wrench. As shown in Figs. 3 and 4, this arm is hollow and has a trans-

versely-curved inner face 7, the lower portion of the arm being cut away or notched at one side, forming a beveled or inclined edge 8.

Mounted within the hollow arm 5 is the adjusting-cam 9, which is best shown in Fig. 6. This cam comprises an elongated body having teeth or threads 10 provided upon one longitudinal edge and extending the entire length thereof. Adjacent the toothed edge of the cam are the axial pivot-lugs 11, one at each end of the cam, and opposite the pivot-lugs at the lower end of the cam is provided an offset operating thumb-piece 12 of approximately L shape. The pivot-lugs of the cam are mounted in suitable recesses 13, formed, respectively, in the under face of the body of the movable jaw and in the upper face of the yoke-shaped slide 6, the toothed edge of the cam being disposed next to the shank of the wrench, which is provided with a toothed rack 14, with which the teeth of the cam are adapted to engage. It will be noted that the inner faces of the slide 6 and the movable jaw next to the rack on the shank are each provided with a groove 15, which is adapted to receive the teeth of the rack to permit of the sliding movement of the movable jaw. These grooves extend across the respective recesses 13, enlarging the same and permitting of a lateral movement of the pivots of the cam.

In the operation of the device it will be noted, by reference to Fig. 4, that the thumb-piece 12 is thrown inward, turning the cam until its teeth are disengaged from the rack on the shank and the flat face 16 is brought adjacent to the rack, in which position the movable jaw is disconnected from its interlocked engagement with the shank and is free to be quickly moved thereon to any desired position. To lock the jaw, the thumb-piece is thrown in the opposite direction or away from the shank, which throws the teeth 10 into engagement with the rack, and as the thumb-piece is forced into the notch formed in the lower end of the arm 5 the upper side of the thumb-piece engages the downwardly beveled or inclined upper edge 8 of the notch, and thereby moves the jaw to a slight degree

longitudinally upon the shank to clamp the jaws more firmly upon the nut or bolt, as will be understood. The transversely-rounded face 17 of the cam engages the rounded inner face 7 of the arm 5, which is adapted to move the cam laterally and positively engage the teeth thereof with the rack on the shank. The bearing-recesses 13 are enlarged, as hereinbefore described, for the purpose of permitting the lateral movement of the cam, whereby the teeth thereof may be positively engaged with the rack. The recesses in which the pivot-lugs of the cam are mounted are deep enough to permit of the limited movement of the jaw on the cam, as hereinbefore described.

The outer end of the yoke-shaped slide 6 is rounded laterally, as at 18, and is cut away adjacent to the notch formed in the lower end of the arm 5, whereby a shoulder 19 is provided, against which the thumb-piece 12 is adapted to engage when the cam has been locked upon the shank. Seated in a suitable recess formed in the rounded edge of the slide is a bowed leaf-spring 20, having its free end extending toward the shoulder 19 and adapted to engage the thumb-piece 12 to hold the cam against accidental displacement when locked upon the shank, but which will permit of the forcible releasing of the thumb-piece when it is desired to adjust the jaw.

The improvements hereinbefore described provide a simple, effective, and durable form of wrench, the movable jaw of which can be quickly adjusted, is more tightly clamped upon the bolt, nut, or other object during the locking of the jaw, and accidental disengagement of the locking means is effectively prevented.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the present invention.

Having thus described the invention, what is claimed is—

1. In a wrench, the combination with a shank having a fixed jaw, and a rack provided thereon, of a movable jaw slidably mounted upon the shank and provided with a notch having a beveled or inclined edge, and a cam pivoted upon the movable jaw and provided with teeth adapted to engage the teeth of the rack, and an operating thumb-piece, the latter being adapted to engage the beveled or inclined edge of the notch formed in the jaw, and move the latter longitudinally upon the shank during the locking of the cam, substantially as and for the purpose set forth.

2. In a wrench, the combination with a shank having a fixed jaw, of a movable jaw slidably mounted upon the shank and having a pendent hollow arm and a slide carried by the arm and embracing the shank, and a cam

pivoted within the hollow arm and between the slide and the body of the jaw, having a lateral movement upon its pivots, and an interlocking engagement with the shank, the cam being adapted to frictionally engage the inner wall of the arm and be forced laterally into positive interlocking engagement with the shank, substantially as shown and described.

3. In a wrench, the combination with a shank having a fixed jaw, of a movable jaw slidably mounted thereon and provided with a slide embracing the shank and pendent from the jaw, a cam mounted between the slide and the body of the movable jaw, having an interlocking engagement with the shank and an approximately L-shaped operating-piece overhanging the slide, and a spring carried by the slide and adapted to engage the thumb-piece and hold the cam against accidental movement, substantially as shown and described.

4. 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, having a hollow pendent arm and a slide carried thereby and embracing the shank, the jaw and the slide being each provided with a groove receiving the teeth of the shank, and a recess communicating with the respective groove, and a cam having teeth provided upon one longitudinal edge and axial pivots adjacent the toothed edge, the pivots being mounted in the respective recesses of the movable jaw and the slide, and adapted to have a lateral movement into the grooves, and the cam being adapted to frictionally engage the inner wall of the arm to move the cam laterally and positively engage its teeth with the rack, substantially as shown and described.

5. In a wrench, the combination with a shank, having a fixed jaw and a toothed rack, of a movable jaw having a pendent hollow arm provided with a notch having an upper downwardly beveled or inclined edge, and a slide embracing the shank, and a cam pivoted to the body of the movable jaw and the slide and disposed within the hollow arm, the cam being provided with teeth adapted to engage the rack and an operating thumb-piece, the latter being adapted to be thrown into the notch in the arm and engage the beveled or inclined edge thereof, substantially as and for the purpose set forth.

6. 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 and having a pendent hollow arm provided with a notch having a downwardly beveled or inclined edge, a slide carried by the arm and embracing the shank, and a cam pivoted within the hollow arm and to the body of the jaw and the slide, having teeth adapted to engage the rack, and an operating thumb-

piece adapted to engage the beveled or inclined edge of the notch and move the jaw longitudinally of the shank, and the cam being adapted to engage the inner wall of the
5 arm and move the cam laterally, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH H. FLANIGAN.

Witnesses:

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