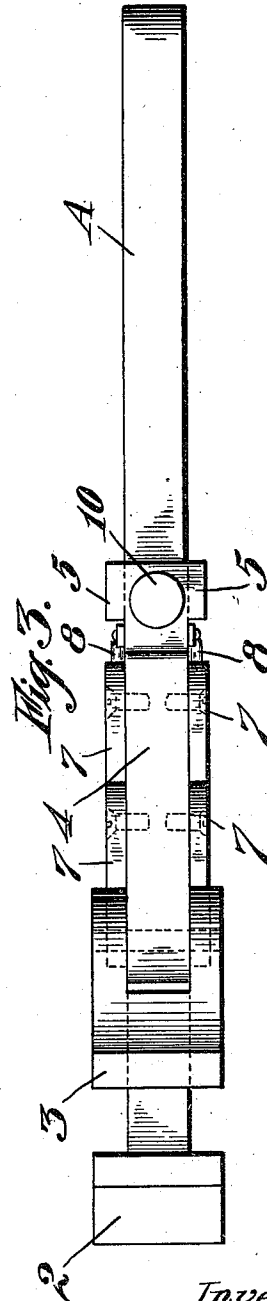
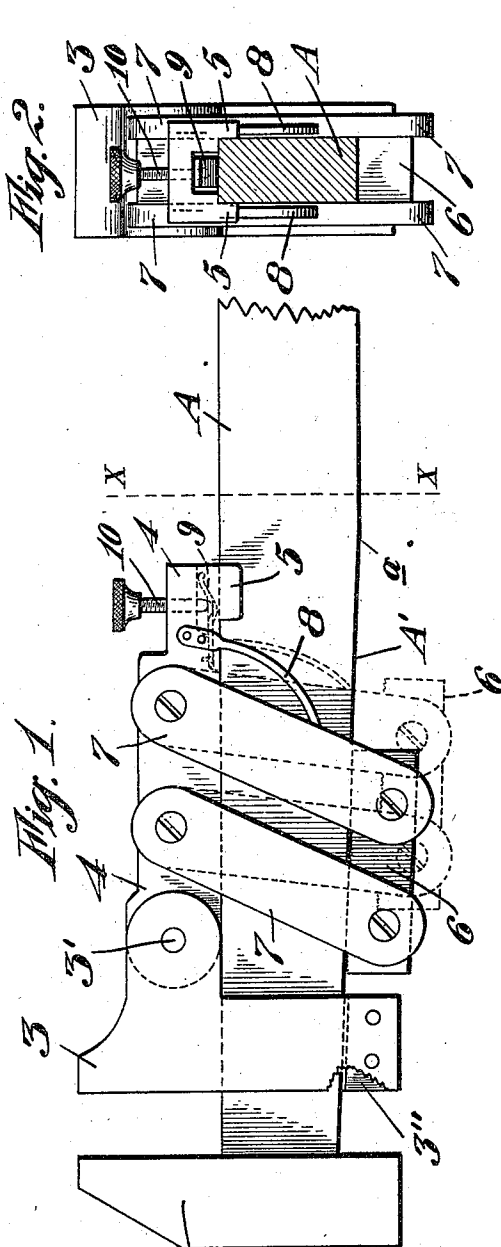


H. HORSMAN.  
WRENCH.

APPLICATION FILED NOV. 29, 1909.

982,064.

Patented Jan. 17, 1911.



Witnesses;  
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# UNITED STATES PATENT OFFICE.

HARRY HORSMAN, OF JAMESTOWN, CALIFORNIA.

## WRENCH.

982,064.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed November 29, 1909. Serial No. 530,319.

*To all whom it may concern:*

Be it known that I, HARRY HORSMAN, citizen of the United States, residing at Jamestown, in the county of Tuolumne and State of California, have invented new and useful

Improvements in Wrenches, of which the following is a specification.

This invention relates to wrenches, and particularly to wrenches of the adjustable type.

It is the object of this invention to provide a wrench that is strong and durable and which can be quickly and easily adjusted, and which is simple in construction and economical in cost of manufacture.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side view of the invention. Fig. 2 is a cross-section on the line X—X, Fig. 1, showing the head of the wrench in elevation. Fig. 3 is a plan view.

In the drawings, A is the shank or handle of the wrench which carries a fixed jaw 2 on its outer end. The shank A is preferably rectangular in cross-section, and has a movable jaw 3 slidably mounted thereon, to coact with jaw 2; the shank A passing through a slot formed in the movable jaw. The jaw 3 is pivotally connected at 3' to a sliding block 4 which bears upon the upper edge of the shank A, and has downwardly projecting guide flanges or lugs 5 which engage with each side of the shank A. The sliding block 4 is connected by links 7 to a clasp-plate or clamp-shoe 6 which is adapted to slide on the lower or opposite edge of the shank A; the links 7 being pivotally secured to the block 4 and shoe 6 in any suitable manner, and mounted on each side of the shank A, as shown in Figs. 2 and 3. I have shown two of these links 7 on each side of the shank, but it is obvious that any number may be employed to connect the sliding bar 4 to the shoe 6.

8 indicates stiff steel springs which are mounted on the sliding block 4, one on each side, and which bear against the rear-most links 7, so as to tend always to hold them at an angle, as shown in Fig. 1, in such manner that the clamp-shoe 6 will normally contact with the under face of the shank A. The links 7 are of such length that when standing vertically, the

shoe 6 would be out of contact with the shank A.

The bottom face of the shank A is on a slight incline from the fixed jaw 2 to a point *a*, so as to give a substantial wedge-like bearing for the shoe 6 and prevent slipping. The edge of the shoe 6 adjacent to the shank or handle A may be roughened or rasped, if desired, to further guard against slippage of the shoe when the jaws are engaged with a nut or other object and the wrench is turned.

A stiff spring 9 is secured to the under side of the block 4 in a depression formed therein, and lightly contacts with the upper face of the shank A. A thumb-screw 10 passes through the block 4 and is adapted to bear upon the spring 9, so that by screwing the thumb-screw tight, the block 4 and the jaw 3 can be set against movement.

In operation, the wrench is adjusted by pulling back upon the shoe 6, or moving the block 4 forward so as to throw the links 7 into a more or less vertical position and in opposition to the springs 8. This action serves to lower the clamp-shoe 6 out of contact with the inclined bottom face A' of the shank, and thus permits of the jaw 3 being moved forward or back until the proper adjustment is obtained, whereupon, by releasing the hold on the clamp members, the springs 8 return the clamp-shoe 6 back to its contacting position with the underneath wedge face on shank A. When the clamp-shoe 6 is in engagement with the under side of the shank A, as it normally is, any force that tends to press the movable jaw 3 back, must exert an upward pull upon the links 7 and thereby draw the clamp-shoe 6 tighter against the inclined face of the shank A, thus giving a dead-lock, the grip of which increases with increased pressure against the jaw 3. The jaw 3 is pivotally connected to the block 4 so that a strain that tends to lift the block upward would come upon the lower portion of the jaw instead of upon the various pivots.

In the drawings I have shown the invention as applied to an ordinary monkey-wrench, but it is obvious that the principle is applicable to pipe-wrenches, or other wrenches having jaws of different shape than that shown, as the form of the jaws is not essential to the operation of the invention.

It is manifest or possible that the construction herein specified may be varied without departing from the principle of the invention, and I desire it to be understood that the invention is not limited to any specific form or arrangement of parts, except in so far as such limitations or their mechanical equivalents are specified in the claims.

The sliding jaw 3 may be forked to slip over the shank and a block 3" fitted up into the forked ends of the jaw and riveted in place.

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

1. In a wrench, the combination of a shank having a pair of jaws thereon, one of which is movable, a block pivoted to the movable jaw, and a friction shoe pivotally connected with said block and cooperating therewith to grip the shank, said shoe being spring-pressed and thereby normally held in frictional engagement with the shank.

2. In a wrench, the combination of a shank having a pair of jaws thereon, one of which is movable, a block pivoted to the movable jaw, a friction shoe pivotally connected with said block and cooperating therewith to grip the shank, and means carried by the block to maintain the block and shoe normally in frictional contact with the shank.

3. In a wrench, the combination of a shank having a pair of jaws thereon, one of which is movable, a block pivoted to the movable jaw, a friction shoe pivotally connected with said block and cooperating therewith to grip the shank, and means carried by the block to maintain the block and shoe normally in frictional contact with the shank, the shank having an inclined or wedge surface coacting with said shoe.

4. In a wrench, the combination of a shank having two jaw members thereon, one of which is movable, a block pivotally connected with the movable jaw and slidable on the shank, a shoe pivotally connected with

the block and slidable on the opposite side of the shank, and means acting on the pivotal connections between the shoe and block for maintaining the shoe and block normally in frictional contact with the shank.

5. In a wrench, the combination of a shank having two jaw members thereon, one of which is movable, a block pivotally connected with the movable jaw and slidable on the shank, a shoe pivotally connected with the block and slidable on the opposite side of the shank, and the shank having a wedge face inclined outwardly from the jaws along which the shoe is slidable.

6. In a wrench, the combination of a shank having two jaw members thereon, one of which is movable, a block pivotally connected with the movable jaw and slidable on the shank, a shoe pivotally connected with the block and slidable on the opposite side of the shank, and a spring carried by the block and acting on the pivotal connections between the block and shoe for maintaining the block and shoe normally in frictional contact with the shank.

7. In a wrench, the combination of a shank having two jaw members thereon, one of which is movable, a block pivotally connected with the movable jaw and slidable on the shank, a shoe pivotally connected with the block and slidable on the opposite side of the shank, and a locking means for preventing either forward or backward movement of the movable jaw, said means including a spring secured to the underside of the block and a screw passing through the block and adapted to bear upon the spring and to force the latter into locking engagement with the shank.

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

HARRY HORSMAN.

Witnesses:

HENRY BUTTEN,  
A. L. FOOTE.