

C. P. CLARK.
WRENCH.

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1,056,628.

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Fig 1

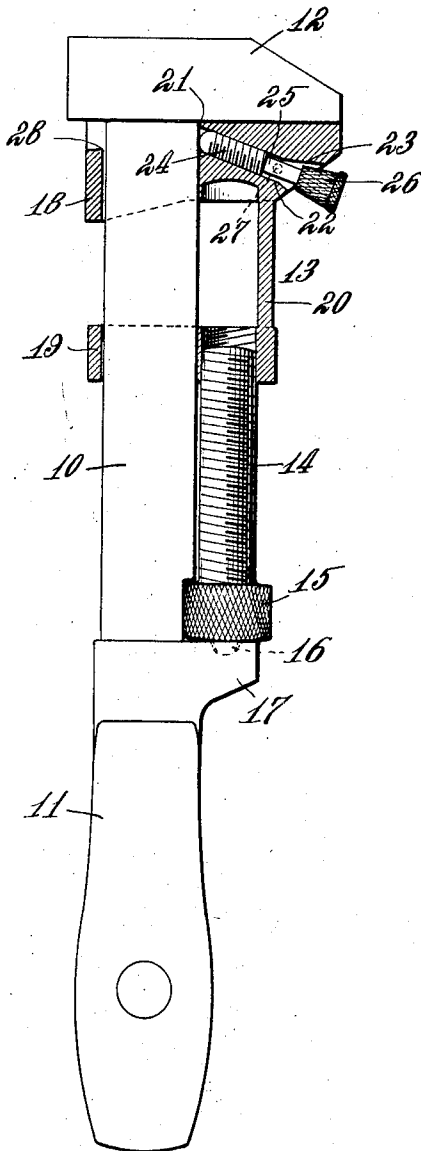


Fig 2

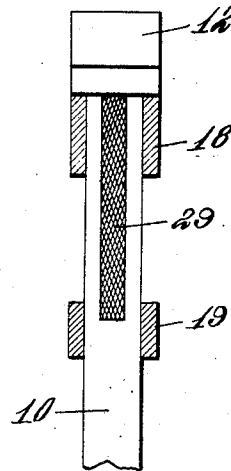
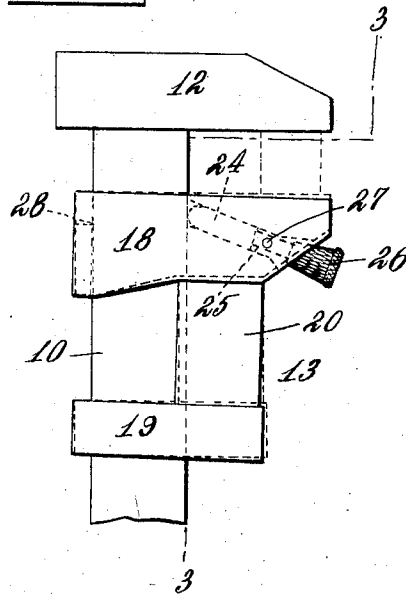


Fig 3



Witnesses

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WRENCH.

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To all whom it may concern:

Be it known that I, CHARLES P. CLARK, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to tools, and has particular reference to an improvement in that class of tools known as monkey wrenches.

In wrenches having an adjustable jaw the adjustable jaw is somewhat loose upon the shank of the wrench, so that when the jaws are applied to the sides of a nut, or the like, and a pressure is exerted upon the wrench to rotate the nut, the adjustable jaw is canted or forced out of true parallelism with the fixed jaw. The jaws in this relation hold the nut and effect the turning of the same, but if it is desired to withdraw the wrench from the nut and place the wrench at a different angle upon the nut, the adjustable jaw falls back into parallelism with the fixed jaw as soon as the wrench is taken from the nut. The result is that the wrench has to be opened, or the adjustable jaw retracted, in order to place the wrench again on the nut.

It is with an object to overcome this difficulty that the improved wrench has been produced.

Broadly, this invention contemplates the provision of means associated with the movable jaw whereby to positively bind and hold the same in position from movement when tightened up against the sides of a nut. This provision is made so as to produce a practically fixed or one-piece wrench wherein the jaws are immovable, and may be slipped over the sides of a nut, or the like, without any readjustment.

These objects and advantages will be more particularly pointed out and referred to in the following specification, and disclosed in the accompanying drawing showing one embodiment of the invention.

In the drawing: Figure 1 is a side elevation of the improved wrench, partly in section. Fig. 2 is a similar view disclosing the adjustable jaw in set position. Fig. 3 is a section on the line 3—3 of Fig. 2.

Referring to the drawing in which like parts are designated throughout the several views by similar characters of reference, 10 designates the shank of a wrench provided with the usual handle 11 and fixed jaw 12.

An adjustable jaw 13 is mounted to slide upon the shank 10, and is adjusted thereon by means of the adjusting screw 14 threaded into the inner end of the jaw 13, and having a knurled portion 15 for engagement with the fingers whereby to rotate the adjusting screw. In the usual manner, the adjusting screw is provided with a stud 16 seated in a correspondingly formed recess or socket provided in the inner face of an offset portion 17 of the handle 11. The knurled portion 15 of the adjusting screw is enlarged and projects into a registering recess formed in the inner edge of the shank 10 whereby to hold the adjusting screw from longitudinal movement.

The adjustable jaw comprises a pair of spaced straps 18 and 19 embracing the shank 10, and joined by a web portion 20. The web portion 20 extends between the straps 18 and 19 at their forward or outer ends, whereby to provide an adjustable jaw registering with the fixed jaw 12. The strap 18 is relatively thick and forms the face of the adjustable jaw, and is provided with an inclined opening 21 extending diagonally backward and outward from the shank 10. The outer end of the opening 21 is enlarged as at 22 and merges into a flaring opening 23 constituting the outer end of the opening 21. The inner end of the opening 21 is provided with a screw-threaded wall whereby to receive in threaded relation a binding screw 24. The binding screw 24 is of a length slightly greater than the opening 21; has an outer externally threaded portion for engagement with the threaded wall of the opening 21; is provided with a reduced or turned-down portion 25 extending through the counterbore or enlargement 22 of the opening, and terminates in a conical knurled head 26. The knurled head 26 is preferably conical in form whereby the head may be more readily grasped and held between the fingers so that the desired pressure may be exerted upon the binding screw to secure the movable jaw in fixed relation to the shank when desired. A pin 27 is driven through the side of the movable jaw and extends partly into the counterbore 22 whereby to engage the shoulder on the binding screw formed by reason of the turned-down portion 25. The pin 27 is adapted to hold the binding screw from accidental displacement from the adjustable jaw 13.

The back portions of the straps 18 and 19

constitute the rear wall of the movable or adjustable jaw 13. The back portion of the strap 18 terminates short of the end of the movable jaw 13 and inwardly of the end of the binding screw 24. This peculiar structure is had for the purpose of providing a fulcrum 28 for the movable jaw 13, which fulcrum is disposed inwardly of the point of engagement of the binding screw 24, so that the pressure of the screw against the shank tends to tilt the movable jaw 13 backwardly from the fixed jaw 12, or in the position which the movable jaw assumes when forced up against the side of a nut. The object of this arrangement and operation is to make the movable jaw 13 a fixed jaw when adjustment is once had so that the wrench may be removed and applied repeatedly to the same nut, or to nuts of the same size without re-adjustment of the wrench.

The shank 10 preferably has a depressed knurled surface or portion 29 extending longitudinally in the forward edge of the shank, and against which the end of the binding screw is adapted to engage. The milled portion 29 holds the screw from slipping when the jaw is adjusted.

From the above disclosure the operation of the improved wrench is apparent, since when it is desired to turn a nut or other angularly faced member, the movable jaw 13 is withdrawn from the fixed jaw 12 by rotation of the adjusting screw 14 so as to admit of the positioning of the wrench about the angularly faced member. The movable jaw 13 is now forced outwardly against the angularly faced member, whereby to bind the movable jaw against the member and bind the jaw against the shank 10 so as to take up any loose play between the movable jaw and the shank. In this adjustment the movable jaw 13 assumes the position disclosed in full lines in Fig. 2, wherein the jaw is canted backwardly from the position disclosed in dotted lines in Fig. 2, wherein the jaws 12 and 13 snugly engage the opposite sides of the nut, or of the member. It is now desired to hold these jaws 12 and 13 in fixed relation, or in the relation found in one-piece or set wrenches. To accomplish this the binding screw 24 is

turned down through the movable jaw 13 and against the milled portion 29 of the shank 10. Since the fulcrum 28, or the point about which the movable jaw 13 swings when forced against the nut is disposed inwardly of the extremity of the binding screw 24, the tightening of the screw 24 only tends to further swing the movable jaw 13 in the direction in which it is canted when brought against the nut. The wrench may now be removed from the nut when the binding screw 24 holds the movable jaw in its canted position so that the jaw will not fall back into its normal position, as disclosed in dotted lines in Fig. 2, and will thereby be held in true adjustment for engagement with the nut at its various sides, or with nuts or members corresponding in size. This structure of wrench is particularly adaptable for use in places where a full turning of the nut or member cannot be had, and where it is necessary to remove and replace the wrench a number of times to complete a full turning of the nut. It will, of course, be understood that this binding screw arrangement may be added to any movable jaw in order to hold it tight upon the shank whereby to effect a practically one-piece or set wrench.

I claim;—

In combination with a monkey wrench having a shank with a fixed jaw, a movable jaw slidable on the shank toward and from the fixed jaw, and means for operating said movable jaw, a binding screw threaded at an angle through said movable jaw and adapted to engage at its inner end with said shank, said movable jaw having its rear wall terminating inwardly of the end of the binding screw to provide a fulcrum for the movable jaw about which said jaw is adapted to positively swing under the pressure of said binding screw.

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

CHARLES P. CLARK.

Witnesses:

MARY J. CLARK,
FREDERIC W. ENTWISTLE.