June 17, 1952 H. T. RUTHERFORD 2,600,693

SLIDABLE SIDE JAW WRENCH

Filed Dec. 11, 1950

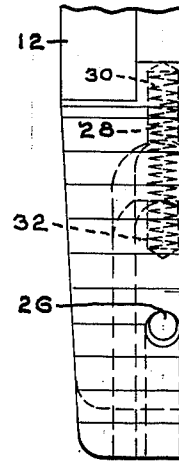


FIG. 4.

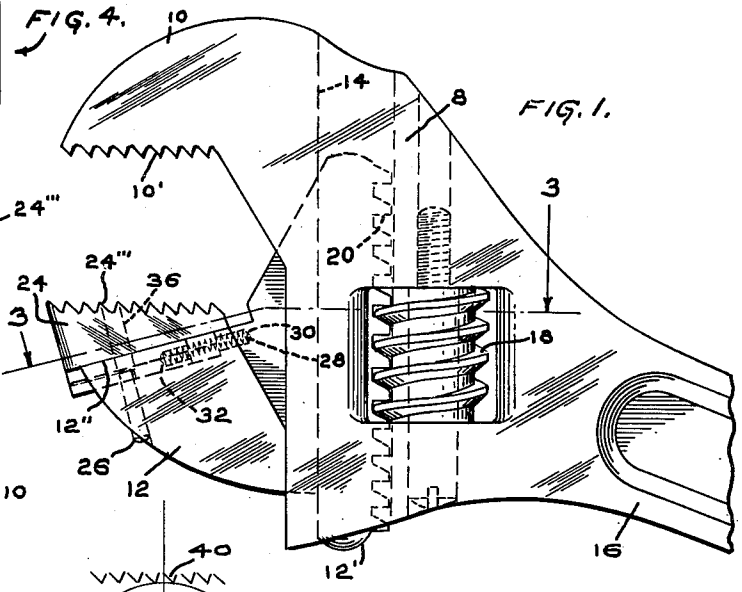


FIG. 1.

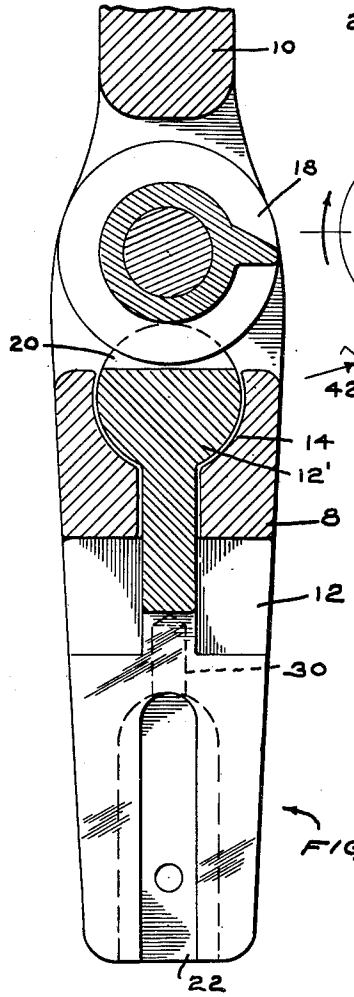


FIG. 3.

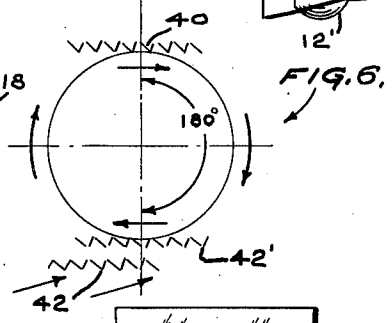


FIG. 6.

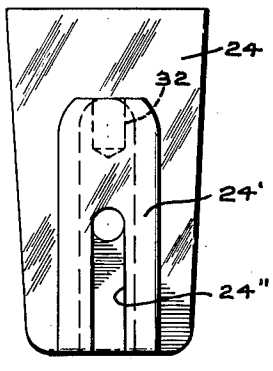


FIG. 5.

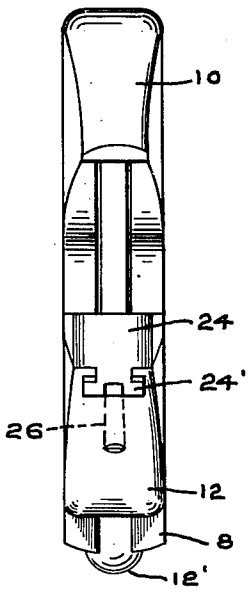


FIG. 2.

INVENTOR.

Harry T. Rutherford.

BY

J. Wesley Everett

Attorney

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SLIDABLE SIDE JAW WRENCH

Harry T. Rutherford, Mount Washington, Md.

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1 Claim. (Cl. 81—179)

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The present invention relates to wrenches and in particular to wrenches adapted to turning pipe or other similar cylindrical stock or tubing.

One object of the invention is to provide a positive adjustable pipe wrench.

Another object of the invention is to provide a wrench of this type which can be better employed in close places.

Still another object of the invention is to provide a pipe wrench in which the working faces are always in parallel.

With these and other objects in view, the invention consists in its novel construction, combination and arrangement of parts, the principles of which are illustrated in the accompanying drawings and described in the following detailed description, in which:

Figure 1 is a side elevation of the wrench.

Figure 2 is a front elevation of the same.

Figure 3 is an enlarged fragmentary sectional view taken along line 3—3 of Figure 1.

Figure 4 is a fragmentary view similar to Figure 3 showing one of the jaw faces in operating position.

Figure 5 is an inverted plan view of the reciprocatory jaw member.

Figure 6 is a diagrammatic view showing the position of the jaw faces in gripping the cylindrical surface of the article.

Referring now to the drawings in detail, the wrench is of the slidable side jaw type, and probably better known in the trade as a "crescent" wrench. The wrench is provided with a jaw head 8 upon which is integrally formed a stationary jaw 10 having a working face 10' and a slidable or movable jaw 12. The slidable or movable jaw moves in a line substantially perpendicular to the face of the stationary jaw. On the opposite side of the jaw head 8 is a handle 16.

The slidable jaw 12 is provided with a reduced portion 12' which is carried in a slot 14 in the jaw head and is held in location by a worm screw 18, which is adapted to engage a gear rack 20 carried along the inner edge of the movable jaw portion 12'.

The face 12'' of the movable jaw 12 is formed at an angle, or taper of approximately 20 degrees to the face 10' of the stationary jaw.

The tapered face is preferably provided with a T slot 22 for receiving a reciprocatory jaw member 24. This reciprocatory jaw is provided with a portion 24' adapted to be slidably received into the T slot 22. The member 24 is held in position on the tapered face 12'' by a pin 26, the

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portion 24' being cut away at 24'' to allow for a predetermined amount of reciprocating movement by the jaw face. Located between the inner portion of the slidable jaw 12 and the jaw 24 is a compression spring 28 having one end extending within a recess 30 in the slidable jaw and a recess 32' in the jaw face 24 for resiliently holding the member 24 outwardly against the pin 26. The member 24 is provided with a hole, or aperture 36 through which a punch may be extended to remove the pin from the jaw 12.

In Figure 6 is shown a diagrammatical sketch illustrating the operation of the wrench. The position of the stationary jaw is shown at 40 and the position of the tapered jaw face, when in extended position, is shown at 42. The tapered jaw face will slide along the inclined surface 12'' of the movable jaw 12 as indicated by the arrow, and by virtue of the incline surface of the movable jaw, the outer working surface 24''' of the reciprocatory jaw face will move to the position as shown at 42'. Therefore the face 10' of the stationary jaw and the inner surface of the jaw face 24 are always parallel and grip the work at diametrically opposite points, or at 180 degrees.

The principle employed in the present invention provides a wrench which is exceedingly positive in its action and is capable of being used in close places. The action is on the principle of a wedge in which the tapered jaw forms a wedge between the stationary and movable jaws and at the same time having the working surfaces of the jaws substantially in parallel planes at all times.

While the reciprocatory jaw face is shown mounted on the movable jaw, it may be mounted on the stationary jaw. The manner of mounting it would be substantially the same as shown for the movable jaw.

While a preferred form of the invention has been shown and described it is not intended to be a limitation as various forms of the invention may be resorted to without departing from the spirit thereof and the scope of the invention is best defined in the appending claim.

I claim:

A wrench comprising a jaw head having a stationary jaw and a movable jaw, the movable jaw having its face angularly disposed to the face of the stationary jaw and sloping outwardly from the stationary jaw in the direction of their outer ends, the jaw head having a channel through the lower portion thereof and a portion of the movable jaw formed in such a manner

as to be slidably receivable within said channel for maintaining and guiding the movable jaw in a line perpendicular to the face of the stationary jaw, gear teeth formed along the inner edge of the movable jaw and a rotatable worm screw carried by the stationary jaw adapted to engage the said teeth for moving and securing the movable jaw in predetermined positions, a reciprocatory tapered jaw face having a reduced portion slidably receivable within a slot in the face of the movable jaw, the wider end of the tapered jaw face extending outwardly from the jaw head, means located between the inner end of the tapered jaw face and the inner end of the slot for resiliently holding the movable jaw in an outwardly position, the bottom edge of the reduced portion of the movable jaw having a recess extending inwardly therein for a predetermined distance, a friction pin extending through an appropriate aperture within the outer end of the movable jaw having its end extended into the said recess in such a manner as to allow free

movement of the tapered jaw face along the angular face of the movable jaw for a predetermined distance, the movable jaw face having an aperture opposite the said pin when in extended position for inserting a tool for removing the said pin and a handle extending outwardly from the back of the jaw head.

HARRY T. RUTHERFORD.

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