April 5, 1932. E. W. CROCKER 1,852,075

WRENCH

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Fig. 1.

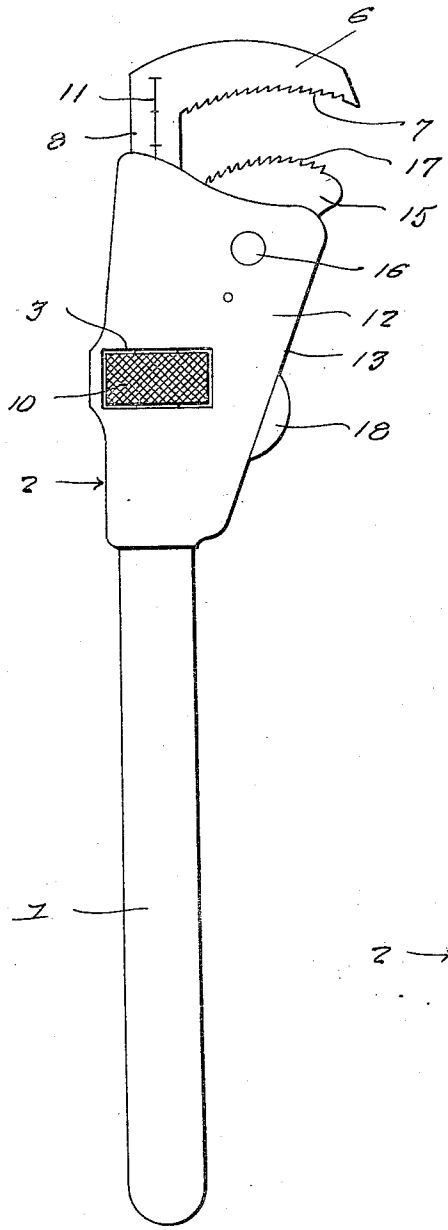

Fig. 2.

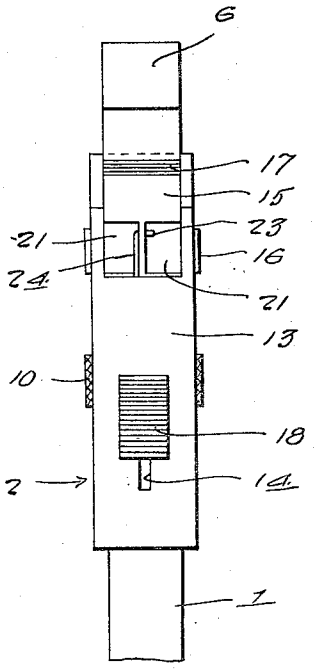

Fig. 4.

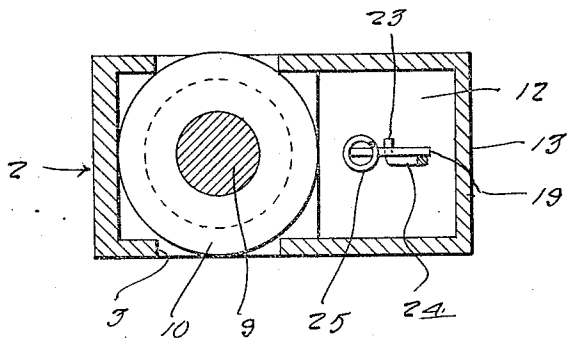

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Fig. 3.

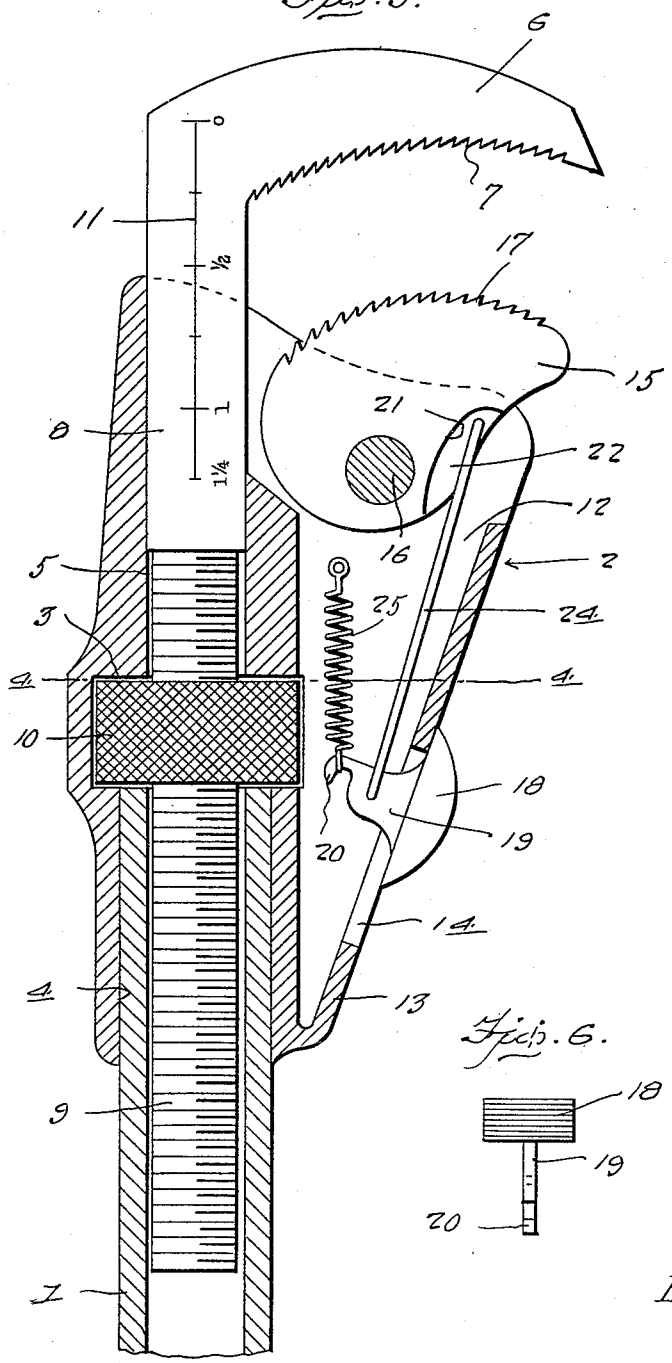

Fig. 5.

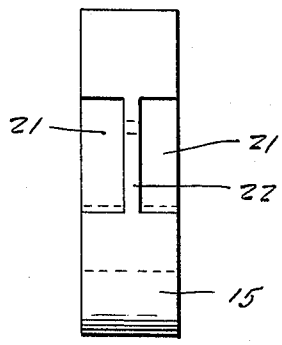

Fig. 7.

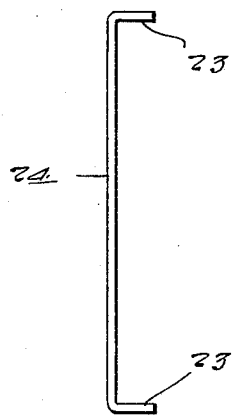

Fig. 6.

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UNITED STATES PATENT OFFICE

ERNEST W. CROCKER, OF DUCHESNE, UTAH

WRENCH

Application filed June 4, 1931. Serial No. 542,168.

This invention relates to a wrench and more particularly to new and useful improvements in pipe wrenches, and has for one of its important objects, to provide, in a manner as hereinafter set forth, a tool of this character embodying a novel construction and arrangement of parts, through the medium of which the pipe or other object to which the tool is applied will be firmly gripped to prevent rotation of the wrench relative thereto.

Another important object of the invention is to provide a wrench of the aforementioned character embodying a slidable outer jaw and further including means through the medium of which the slidable jaw may be expeditiously adjusted to any desired position without the necessity for applying the wrench to the work.

Other objects of the invention are to provide a wrench of the character described which will be simple in construction, strong, durable, compact, efficient and reliable in operation and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings, wherein like characters of reference designate corresponding parts throughout the several views, and wherein:—

Figure 1 is a view in side elevation showing a wrench constructed in accordance with the present invention.

Fig. 2 is a view in front elevation showing a portion of the wrench.

Fig. 3 is a view in vertical section through a portion of the wrench.

Fig. 4 is across sectional view taken substantially on the line 4—4 of Fig. 3.

Fig. 5 is a detailed view in front elevation of the pivoted jaw.

Fig. 6 is a detail view in bottom plan of the slidable thumb piece or member.

Fig. 7 is a detail view of the link which slidably connects the pivoted jaw with the slidable member for actuation thereby.

Referring now to the drawings in detail, it will be seen that the numeral 1 designates an elongated, tubular handle which may be closed at one end and which is open at its other end. Fixed on the end portion of the handle 1 which is hollow, is a head 2 having opposed openings 3. A bore 4 extends longitudinally in the head 2 from one side of the opening 3 for the reception of the handle 1. The head 2 is further provided with a comparatively small bore 5 which is alined with the bore 4 and which extends longitudinally in the head from the other side of the opening 3.

The reference numeral 6 designates an outer slidable jaw having a concave, toothed work engaging face 7. The slidable jaw 6 is formed integrally with a shank which includes a smooth portion 8 and a threaded free end portion 9. The shank of the jaw 6 is operable in the bore 5 and the handle 1 and the threaded portion 9 of said shank traverses the opening 3 and has threadedly mounted thereon and rotatably disposed in the opening 3 a knurled adjusting nut 10.

The smooth portion 8 of the shank is provided with a scale 11 on at least one side thereof. The head 2 further includes a hollow portion 12 having an inclined forward wall 13 provided with a longitudinal slot 14. A portion 12 of the head 2 is open at its forward end and has mounted for swinging movement therein a jaw 15 which is eccentrically mounted, as at 16, in the hollow portion 12 of the head 2, the swinging jaw 15 projecting beyond the forward end of the head 2.

The jaw 15 is provided with a toothed convex work engaging face 17, the teeth on the jaw 15 being oppositely disposed with respect to those on the slidable jaw 6.

A thumb piece 18 is slidably mounted on the inclined wall 13 of the head 2, and has extending therefrom an arm 12 which is operable in the slot 14 and which extends into the hollow portion 12 of the head 2, and terminates in a downwardly directed hook 20. The forward side of the swinging jaw 15 is recessed, as at 21 in a manner to provide a rib 22 having an aperture therein, for the reception of one of the trunnions 23 on the ends of a connecting link 24 which consti-

tutes means for operatively connecting the swinging jaw 15 from being the thumb piece 18 for actuation thereby.

The trunnion on the other end of the link 24 is journaled in an aperture provided therefor in the arm 19 of the thumb piece 18. A coiled spring 25 has one end anchored to the head 2 and its other end connected with the hook 20 for yieldingly urging the swinging jaw 15 toward its operative or work engaging position. The coiled spring 25 is, of course, disposed in the hollow portion 12 of the head 2.

In use, the sliding jaw 6 may be expeditiously adjusted to the desired position through the medium of the adjusting nut 10 by observing the scale 11 relative to the free end of the head 2, as will be obvious. In this manner, the slidable jaw 6 may be adjusted substantially to the desired position without the necessity for applying the tool to the work. When the tool is to be applied to the work, the thumb piece 18 is moved downwardly against the tension of the coiled spring 25 to swing the jaw 15 away from the jaw 6. The tool is then applied to the work and the thumb piece 18 is released, after which the coiled spring 25 will swing the jaw 15 against the work. Then, when the handle 1 is swung or moved from left to right as the tool is viewed in Figs. 1 and 3 of the drawings, the jaw 15 functions as a cam and rigidly grips the pipe and the greater the force or power applied to the handle 1, the tighter the pipe or other object will be gripped.

It is believed that the many advantages of a wrench constructed in accordance with this invention will be readily understood, and although the preferred embodiment of the invention is as illustrated and described, it is to be understood that changes in the details of construction may be made which will fall within the scope of the invention as claimed.

Having thus described my invention, what I claim as new is:—

A wrench comprising a handle, a head fixed on one end portion to the handle and having a hollow portion, said head further having an inclined wall having a longitudinal slot therein, a slidable jaw mounted on the head, means for adjusting the slidable jaw, a pivoted jaw eccentrically mounted in the hollow portion of the head and projecting therefrom in opposed relation to the first-named jaw for co-action with said first-named jaw, a thumb piece mounted for sliding movement on the inclined wall of the head, an arm on the thumb piece operable in the slot and extending into the hollow portion of the head, a hook on the free end of the arm, a link operatively connecting the pivoted jaw to the arms for actuation by the thumb piece, and a coiled spring mounted in the hollow portion of the head and having one end anchored thereto and its other end connected to the hook for yieldingly urging the pivoted jaw toward its work-engaging position.

In testimony whereof I affix my signature.

ERNEST W. CROCKER.