

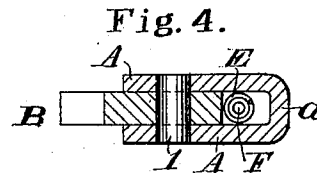
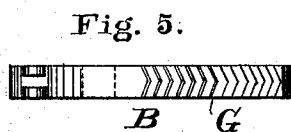
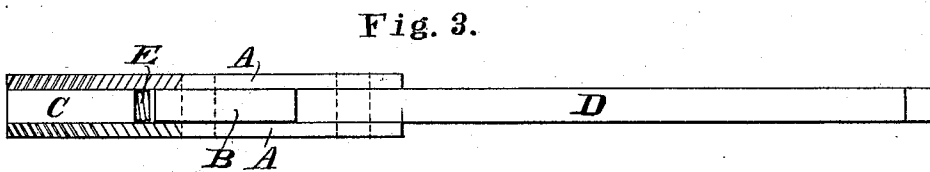
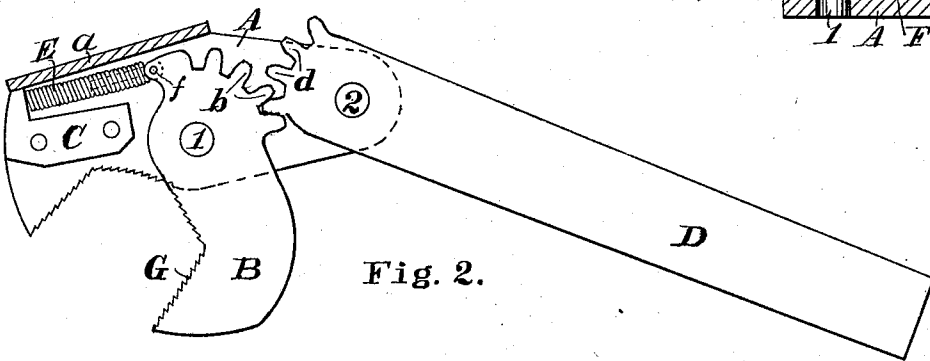
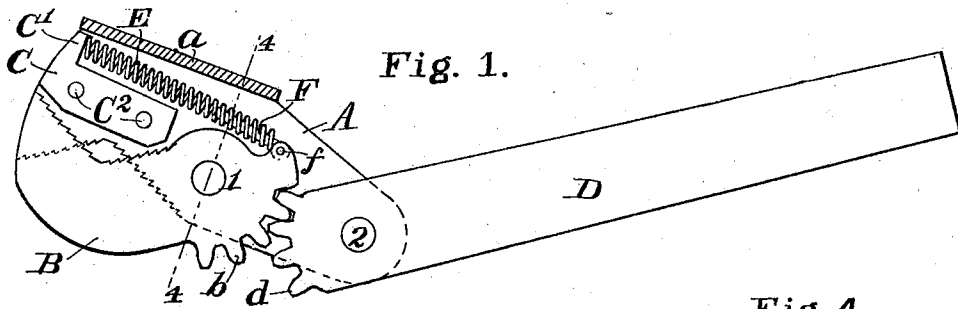
No. 824,082.

PATENTED JUNE 19, 1906.

H. L. REYNOLDS.

WRENCH.

APPLICATION FILED JULY 31, 1905.



Witnesses.
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UNITED STATES PATENT OFFICE.

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WRENCH.

No. 824,082.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY L. REYNOLDS, a citizen of the United States, and resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to an improvement in wrenches, and comprises the parts and combinations of parts which will be defined by the claims.

The object of my invention is to improve and simplify such devices.

In the accompanying drawings I have shown my invention embodied in the form which is now preferred by me.

Figures 1 and 2 are respectively closed and open positions of my invention, one plate member of the principal jaw being cut away to more clearly show the construction of the other parts. Fig. 3 is an edge view of my wrench. Fig. 4 is a section on the line 4 4 of Fig. 1, and Fig. 5 is an edge face view of the smaller or swinging jaw.

My invention belongs to that class of wrenches which are capable of accommodating themselves to objects of considerable range in size without the necessity of special adjustment of any part. It is also characterized by a construction in which the force of the grip is dependent in a certain ratio upon the pull upon the handle and also by the use of a spring to automatically close the jaws upon the article to be gripped.

I will now describe my invention as it is shown in the drawings. The principal jaw, or the one which may properly be called the "fixed" or "fulcrum" jaw, comprises two separated plate members A, these preferably being fixedly connected with each other by other means than the pivots. The preferred form of construction is to make both of a single plate bent into shape, leaving a connecting-web *a* at the back. This jaw has two pivots 1 and 2. The other or swinging jaw B is journaled on that one of the pivots 1 which is nearest that end of the principal jaw A, which is provided with gripping-surfaces. Both jaws are provided with gripping-surfaces of whatever character desired. That shown is toothed and adapted to grip pipes and other round objects. For such purposes I prefer to dispose the teeth in an inclined or

herring-bone pattern—that is, the teeth upon opposite sides of the center line being oppositely inclined. This is clearly shown in Fig. 5, which shows the gripping-surfaces of the teeth upon the swinging central jaw B, and in Fig. 3, which shows the gripping-surfaces of the principal or fulcrum jaw A. This latter jaw being composed of two separated plates, it is convenient to incline the teeth on one plate in one direction and those upon the other plate in the other direction, as has been shown.

Between the inner end of the main or fulcrum jaws A is pivoted the handle-lever D. This lever and the swinging jaw B are provided with intermeshing teeth *d* and *b*, whereby a pull upon the lever is communicated to the jaws to grip them upon the pipe, the intensity of the grip being proportioned to the pull upon the handle.

As is clearly shown in Fig. 1, the outer end of the swinging jaw B may swing between the plates of the jaw, thus enabling a very small article to be gripped. Also this space may be filled by a filler-block, which will prevent this. In this case the filler-block may be also provided with gripping-teeth. I have shown a filler-block C between these plates, but with its outer surface cut back to a point where it will not interfere with the entrance of the other jaw. This filler-block is secured by rivets C' and is provided with a lug C' at its outer end extending toward the back side, thus keeping the body of the block away from the web *a*, forming a socket for the reception of the jaw-closing spring E. This is a helically-coiled wire spring bearing at one end against the lug C' (which is equivalent to bearing against the jaw A) and at the other end bearing against the swinging lug B. Preferably the bearing of the spring against the jaw B should be fixed against accidental displacement. I have shown this as secured by a pin F, which enters the coil of the spring and is pivoted to the rear of the jaw by a pin *f*. This construction forms an inclosed pocket in which the spring may lie securely protected against accident or displacement no matter how the wrench is used.

What I claim, and desire to secure by Letters Patent, is—

1. A wrench comprising a jaw having two separated plate members and two pivots, a

complementary jaw journaled upon one of said pivots between said plates and having a toothed segment, a handle journaled upon the other pivot between said plates and having a toothed segment engaging said toothed segment upon the jaw and a spring lying between said plate members and acting upon said jaws to close them.

2. A wrench comprising a jaw having two separated plate members and two pivots, a complementary jaw journaled upon one of said pivots between said plates and having a toothed segment, a handle journaled upon the other pivot between said plates and having a toothed segment engaging said toothed segment upon the jaw and a spring acting between said jaws to close them together.

3. A wrench comprising a jaw consisting of two separated plate members and an integral connecting-web along their back edges, a complementary jaw pivoted to and between said plate members, and having a toothed segment, and a handle-lever also pivoted to and between said plate members and having a toothed segment engaging the said toothed segment of the jaw.

4. A wrench comprising a jaw having two separated plate members connected by a web along their back edges, a complementary jaw pivoted to and between said plate members, and having a toothed segment, a handle-lever also pivoted to and between said plate members and having a toothed segment engaging the said toothed segment of the jaw, and a spring lying between said plate mem-

bers at the back and engaging both jaws to close them.

5. A wrench comprising a jaw having two separated plate members connected at their back and having two pivots, a jaw journaled between said plates upon one of said pivots and provided with a toothed segment on its inner end, the outer end of said jaw being adapted when closed to swing between the two plates constituting the other jaw, a handle journaled between said plates on the other pivot and having a toothed segment meshing with the toothed segment of the other jaw, and a spring lying between said plates at the back and engaging both jaws to close them.

6. A wrench comprising a jaw having two separated plate members connected by a web at their back edges, a filler-block secured between said plates at their outer portions and forming a spring-retaining socket along the connecting-web, a jaw pivoted between said plate members, a spring lying in said socket and engaging said last-mentioned jaw, and a handle-lever pivoted between the rear portions of said plate members, said handle-lever and the pivoted jaw being connected to swing together.

In testimony whereof I have hereunto affixed my signature, this 22d day of July, 1905, in the presence of two witnesses.

HENRY L. REYNOLDS.

Witnesses:

FREDERIC B. CHANDLER,
WM. B. TYLER.