

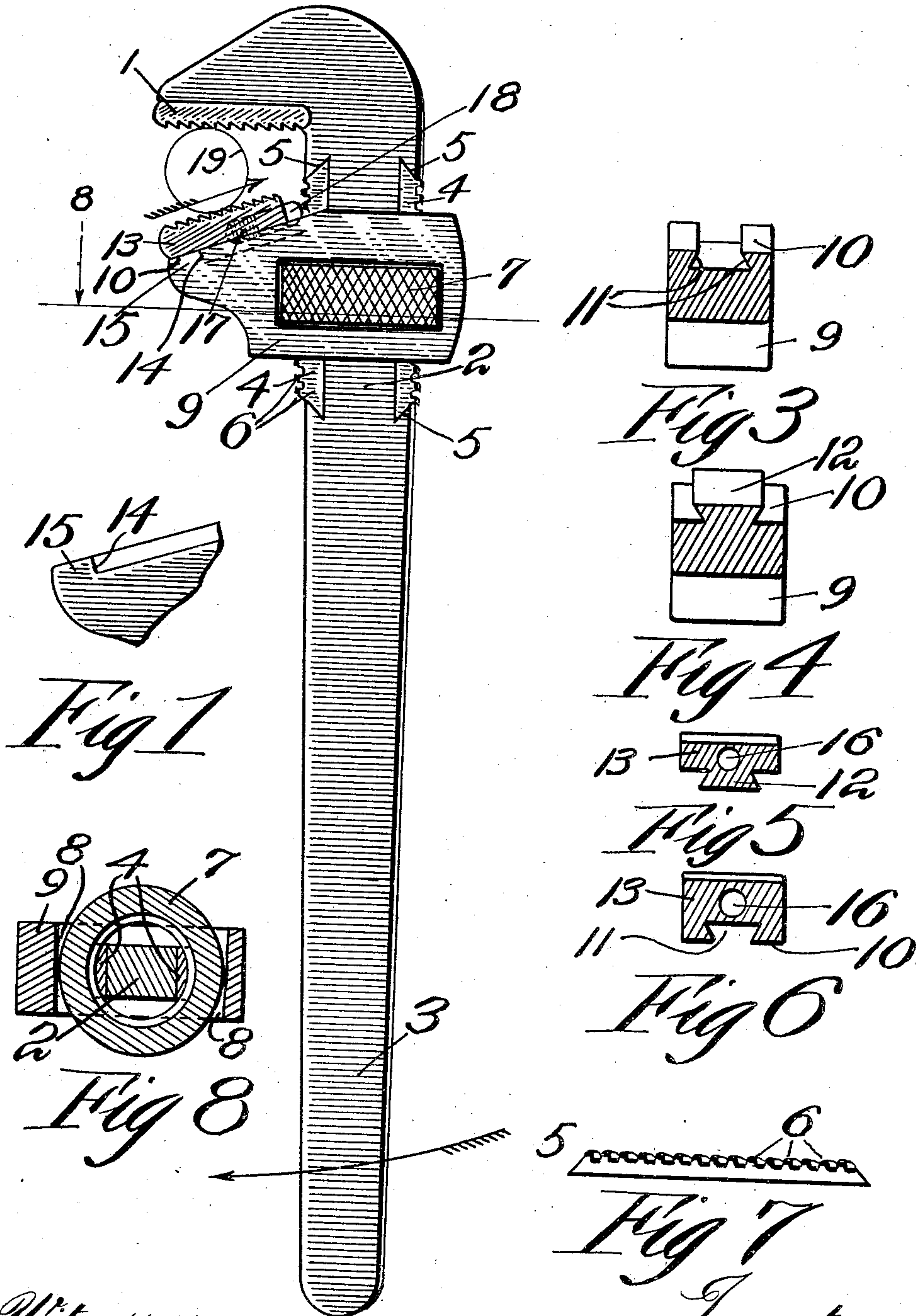
No. 898,267.

PATENTED SEPT. 8, 1908.

H. N. ROTHWEILER.

WRENCH.

APPLICATION FILED MAR. 23, 1908.



Witnesses:

Chas Meyer

Bessie Brown

Inventor: Harvey Nelson Rothweiler.

By

[Signature]
His Attorney

UNITED STATES PATENT OFFICE.

HARVEY NELSON ROTHWEILER, OF SEATTLE, WASHINGTON.

WRENCH.

No. 898,267.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed March 23, 1908. Serial No. 422,859.

To all whom it may concern:

Be it known that I, HARVEY NELSON ROTHWEILER, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented new and useful Improvements in Wrenches, of which the following is a clear and concise specification.

My invention relates to a pipe wrench having a slidably mounted movable jaw and removable threaded portion on the shank of said wrench.

The objects of my invention are to provide a slidably mounted movable jaw for pipe wrenches in which no retaining pins or other detachable retaining devices are used; to provide an efficient pipe wrench with few loose pieces; to provide a pipe wrench having removable threads on the shank thereof. I accomplish these as well as other objects by the construction now preferred by me and illustrated in the accompanying drawings in which

Figure 1 is a fragmentary view of the modification of the frame piece of my device. Fig. 2 is a view of my entire device. Fig. 3 is a transverse section of the preferred form of frame piece of my device. Fig. 4 is a transverse section of the modification of the frame piece of my device. Fig. 5 is a transverse section of the movable jaw member of my device. Fig. 6 is a modification of the movable jaw member of my device. Fig. 7 is an elevation of one of the renewable thread elements of my device, and Fig. 8 is a section at 8, Fig. 2.

Similar reference numerals refer to similar parts throughout the several views of my device as illustrated in the accompanying drawings.

My wrench consists essentially of the fixed jaw 1 formed integral with the shank 2 which terminates in the handle 3. The shank 2 is provided with detachable thread elements 4, beveled at the ends 5 thereof to form a dove-tail and snugly fitting the like shaped opening in said shank 2 and preferably disposed so that the threads 6 will project substantially above said shank 2 to permit the nut 7 to be freely removed from said shank 2 and over the handle 3. Said nut 7 travels in the opening 8 provided in the frame piece 9, which is slidably mounted on the shank 2 and thread elements 4. Said frame piece 9 is provided with an inclined surface 10 and

dove-tail 11 adapted to receive a like shaped dove-tail 12 on the movable jaw 13.

The movable jaw 13 may be readily removed when the frame piece 9 has been removed from the shank and handle of my device by moving in the direction indicated by the arrow above said jaw 13 in Fig. 2 of the accompanying drawings. Said dove-tail preferably ends at 14 to form a stop 15 thus limiting the travel of said movable jaw in the opposite direction from that indicated by the said arrow. To force said movable jaw to the normal position thereof, *i. e.*; against said stop 15 I have provided a hole 16 having a coil spring 17 therein, and adapted to fit the pin 18 having one end thereof resting against said spring and the opposite end against said threads 6. It is obvious that by applying force to said handle 3 in the direction of the arrow at the lower end of Fig. 2 that said movable jaw will slide on said inclined surface 10 and will overcome said spring 17 and will snugly grip a cylindrical object as 19 held between said jaws 1 and 13. In Figs. 1, 4 and 6 I have shown the projecting portion of the dove-tail formed on said frame piece 9, while in my preferred form said projecting portion is formed on said movable jaw 13, this being done in view of the tempering of said jaw 13 which by experiment has proved more uniform by the preferred construction. It is obvious that when said frame piece 9 is in its normal position that said thread elements 4 cannot be removed even though by accident or poor workmanship said elements may have become loosened.

I do not wish to be limited to the specific construction herein described but wish to depart from such details as are within the scope of our patent.

It will be noticed from the drawing that the dove tail rib and tenon connecting the sliding jaw 9 and the jaw face 13 extend in the direction of length of the jaw face, and the dove tail groove in the inclined face of the jaw 9 extends at its inner end to and communicates with the opening in the said sliding jaw for the wrench bar, this construction permitting the application and removal of the jaw face 13 when the sliding jaw is removed from the wrench bar, and the wrench bar preventing the removal of the jaw face 13 when the parts are assembled as shown in Fig. 2 of the drawing.

As best shown in Fig. 2, a spring is inter-

posed between the thread plate 4 and the sliding jaw face, which is dove tailed in the sliding jaw, and this spring thereby performs the double function of actuating the sliding jaw face and also steadying the thread plate at its connection with the wrench bar. The sliding jaw 9 constitutes a frame fitting entirely around the nut 7, see Fig. 2, so that the said jaw is not weakened to any material extent by the lateral opening for the passage of the nut, and the nut is inclosed by the frame like structure of the sliding jaw and the spring interposed between the jaw face sliding on the jaw 9, and the wrench bar serves to actuate the sliding jaw face and by its pressure against the wrench bar will tighten the sliding jaw 9 upon the wrench bar and upon the nut 7 inclosed by the frame like structure of the sliding jaw as will be best understood from Fig. 2 of the drawing.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. The improvement in wrenches comprising a wrench bar having a fixed jaw, and provided with under-cut recesses in its opposite edges, thread plates fitting in said recesses and held by the dove tail form thereof, a jaw sliding over the wrench bar and over the thread plates and having a nut

engaging therewith, the said jaw operating to prevent the displacement of the thread plates when fitting thereover, a jaw face having a dove tail connection with the sliding jaw, and a spring interposed between the inner end of the said jaw face and thread plate whereby to actuate the jaw face and to steady the thread plate in position, substantially as set forth.

2. The improved wrench comprising a wrench bar having a jaw, a jaw sliding on the wrench bar and having a frame like construction to fit over an adjusting nut, an adjusting nut in said frame like sliding jaw, and screwing upon the wrench bar, a jaw face having a dove tail connection with the sliding jaw, and a spring acting between the inner end of the jaw face and the wrench bar whereby to actuate the jaw face and to tighten the sliding jaw upon the nut and wrench bar, all substantially as and for the purposes set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARVEY NELSON ROTHWEILER.

Witnesses:

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