

J. LERFALD.

WRENCH.

APPLICATION FILED JAN. 20, 1915.

1,155,937.

Patented Oct. 5, 1915.

2 SHEETS—SHEET 1.

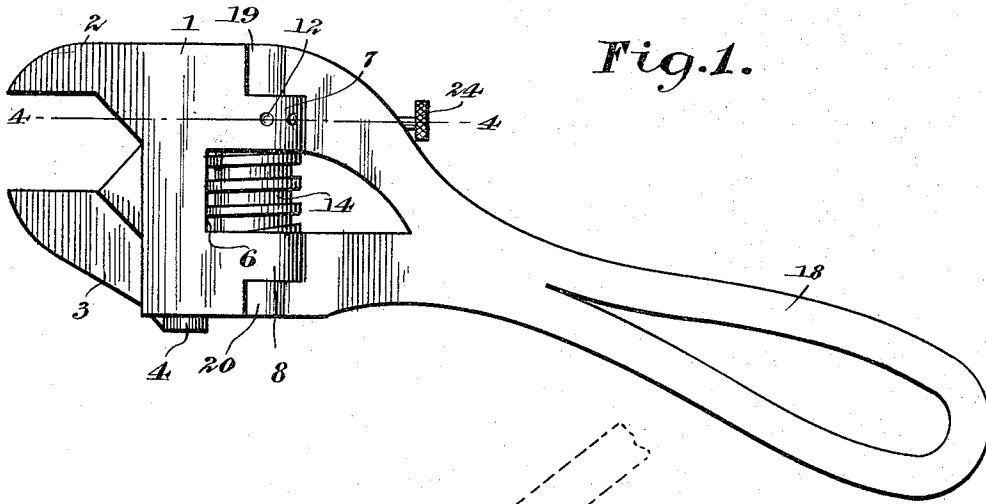


Fig. 2.

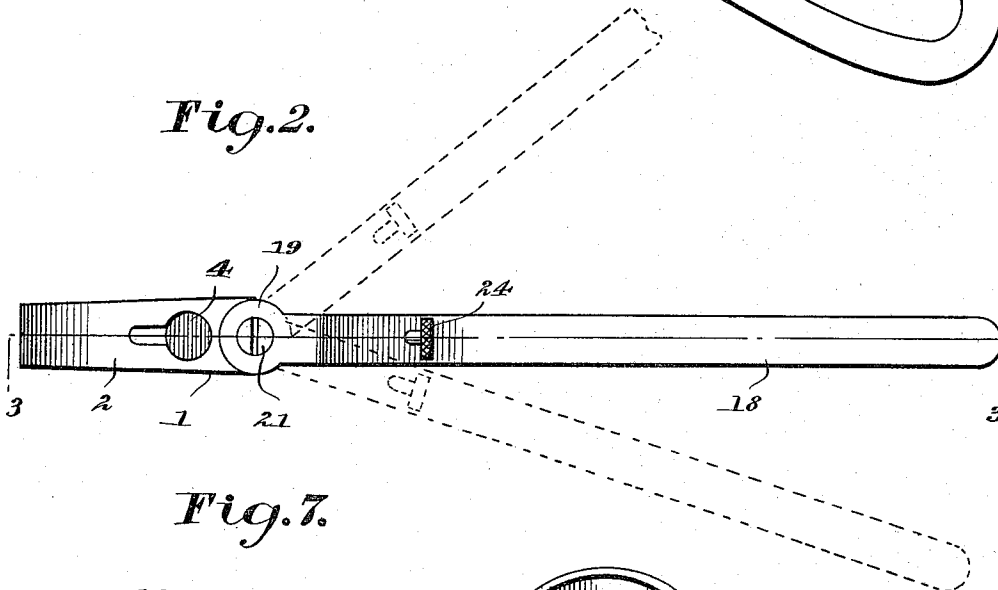


Fig. 7.

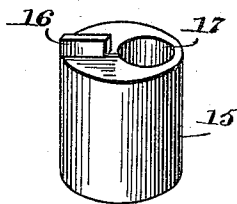
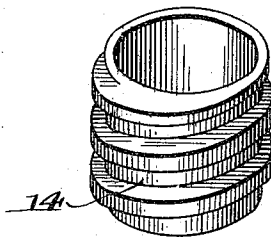


Fig. 8.



Witnesses

Frederick W. Ely,
[Signature]

Inventor
J. Lorfald,

By Victor J. Evans
Attorney

J. LERFALD.

WRENCH.

APPLICATION FILED JAN. 20, 1915.

1,155,937.

Patented Oct. 5, 1915.

2 SHEETS—SHEET 2.

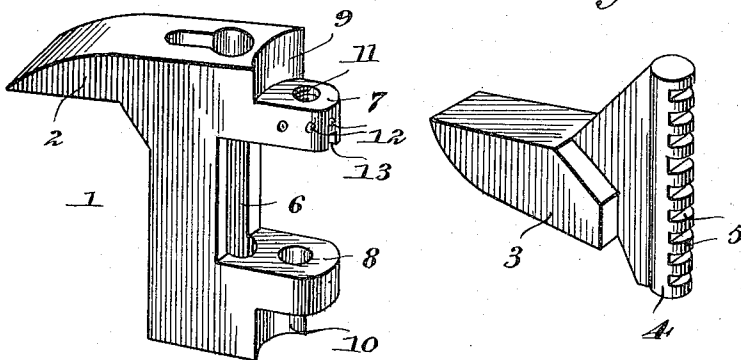
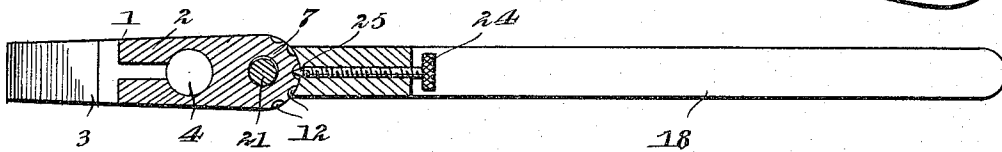
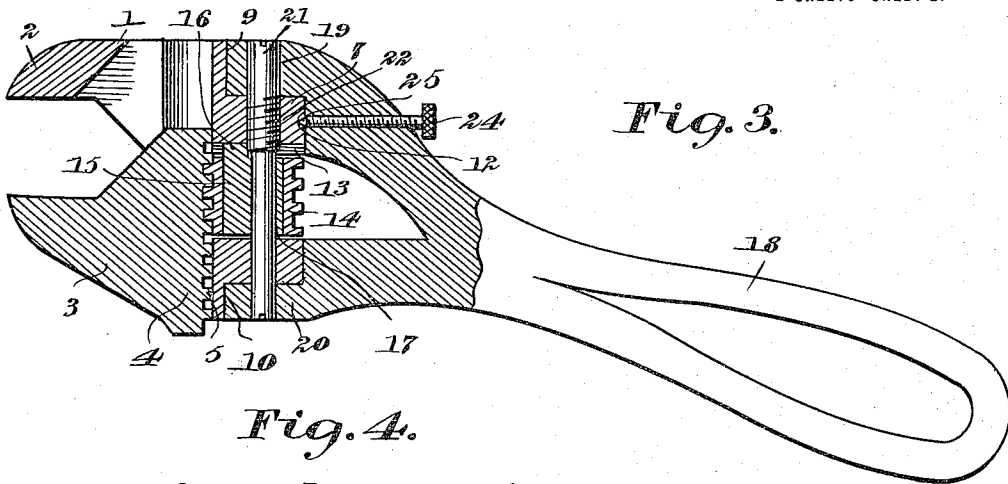
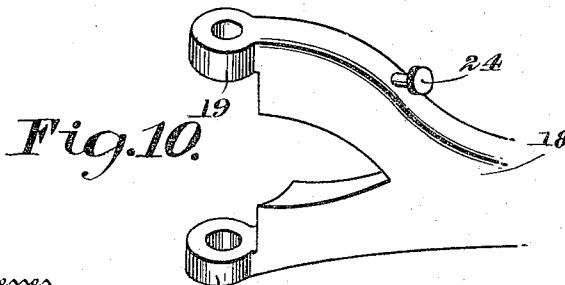
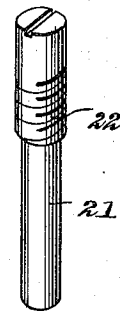


Fig. 9.



Witnesses

Frederick W. Ely,
Wm. D. North

Inventor
J. Lorfald,

By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

JULIUS LERFALD, OF BELFIELD, NORTH DAKOTA.

WRENCH.

1,155,937.

Specification of Letters Patent.

Patented Oct. 5, 1915.

Application filed January 20, 1915. Serial No. 3,327.

To all whom it may concern:

Be it known that I, JULIUS LERFALD, a citizen of the United States, residing at Belfield, in the county of Stark and State of North Dakota, have invented new and useful Improvements in Wrenches, of which the following is a specification.

The present invention relates to improvements in wrenches, and has for one of its objects to provide a wrench which may be conveniently employed for operation upon a nut which is so located that it could not be readily reached by a wrench of the ordinary type.

It is a further object of the invention to provide a wrench in which the handle may be connected with the stock so as to extend at various angles with respect thereto to provide for convenient use of the wrench under various conditions to retain the stock rigidly secured to the handle in said adjustment.

It is a further object of the invention to provide for the compactness in the construction of the wrench whereby the adjusting screw may be arranged to contact with the teeth upon the shank of the movable jaw without necessitating unnecessary or enlarged depressions or openings which would tend to weaken the members.

A still further object of the invention is to provide a pivoted member or bolt between the handle and the stock having threads thereon at one point only to engage with the threads provided in one of the knuckles of the stationary jaw so that the handle may be freely rotated upon the stock, and further whereby the pivot member may be easily and quickly removed when the parts of the wrench are to be disassociated.

With the above and other objects in view, the improvement resides in the construction, combination and arrangement of parts set forth in the following specification and falling within the scope of the appended claims.

In the drawings Figure 1 is a side elevation of a wrench constructed in accordance with the present invention, Fig. 2 is a top plan view of the same illustrating by the dotted lines the various positions or inclinations to which the handle may be thrown with relation to the stock, Fig. 3 is a longitudinal sectional view on the line 3—3 of Fig. 2, Fig. 4 is a sectional view on the line 4—4 of Fig. 1, Fig. 5 is a perspective view of a fixed jaw, Fig. 6 is a similar view of the

movable jaw, Fig. 7 is a similar view of the bearing sleeve, Fig. 8 is a similar view of the operating screw, Fig. 9 is a similar view of the pivot pin, Fig. 10 is a similar view of a portion of the handle.

In the drawings, the head of the wrench is indicated by the numeral 1 and is formed with a fixed jaw 2. The movable jaw of the wrench is indicated by the numeral 3 and has a substantially key-shaped shank 4 that is slidably fitted in a slot formed in the head 1. The shank 4 is provided upon its rounded portion with a series of spaced teeth 5. The head 1 is formed with a transverse recess 6 in its stock providing the said stock with spaced ears or knuckles 7 and 8 respectively, and the portion of the stock to the opposite sides of said knuckles is depressed or cut-away, as indicated by the numerals 9 and 10. The knuckles 7 and 8 are provided with registering openings, the opening in the knuckle 7 being threaded, as indicated by the numeral 11, and the outer rounded face of said knuckle 7 is provided with a plurality of spaced depressions 12. The inner face of the knuckle 7 is further provided with a longitudinally extending centrally arranged slot 13, the purpose of which arrangement will be presently set forth. The threads or teeth 5 of the shank 4 of the movable jaw 3 are extended within the recess 6 and are adapted to be engaged by the threads upon an operating screw 14. The screw 14 is mounted for rotation upon a bearing sleeve 15, the same having one of its ends provided with a lug 16 which is adapted to be received within the slot of the knuckle 7. The bearing sleeve 15 has its bore 17 arranged eccentrically thereof, so that the screw 14 will be forced in the recess 6 to bring its threads into engagement with the teeth 5 of the movable jaw without necessitating a further cutting away of the portions 9 and 10 beyond the knuckles 7 and 8, and consequently weakening the wrench. The numeral 18 designates the handle for the stock, the same having one of its ends channeled transversely to provide oppositely disposed ears 19 and 20 respectively, the said ears having their outer faces rounded to be snugly received within the rounded portions formed by the depressions 9 and 10, and the ear 19 is adapted to rest upon the outer face of the knuckle 7 while the ear 20 rests upon the outer face of the knuckle 8. The ears 19 and 20 are provided

with registering openings which aline with the registering openings in the ears 7 and 8, when the handle is positioned upon the stock.

5 The numeral 21 designates a pivot or connecting pin which passes through the alining openings in the ears and knuckles, the said pin being formed with threads 22 which co-act with the threads 11 in the knuckle 7. It is to be noted that the pin 21 has a smooth face throughout except for the threaded portion 22, and the threads 22 do not extend beyond the opposite faces of the knuckle 7 so that the handle will be free to revolve upon the said pin and likewise the bore 17 of the bearing sleeve 15 will receive a smooth bearing.

Extending longitudinally through one of the arms below the ear 19 of the handle 18, provided by the channel in the end of said handle, is a thumb screw 24, the end of its shank being substantially cone-shaped, as indicated by the numeral 25, and this end 25 is adapted to be received within one of the depressions 12 in the knuckle 7, so that the handle may be swung upon the stock to a desired angle and sustained in such adjusted position, as illustrated in Fig. 2 of the drawings.

30 From the above description, taken in connection with the accompanying drawings, the simplicity of the device, as well as the advantages thereof will, it is thought, be perfectly apparent to those skilled in the art to which such invention appertains without further detailed description.

Having thus described the invention, what I claim is:

1. In a wrench, a stationary jaw having its body recessed to provide spaced knuckles, a movable jaw having a toothed shank arranged in a slot in the body of the stationary jaw and its teeth projecting in the recess between the knuckles, and an eccentrically pivoted bearing sleeve between the knuckles, a screw journaled on the sleeve and engaging with the teeth upon the shank

of the movable jaw, and a pivoted handle for the wrench.

2. In a wrench, a stationary jaw having its body recessed to provide spaced knuckles having alining openings, a handle having a bifurcated end arranged upon the outer face of the knuckles, a pivoted pin passing through the openings in the handle through the openings in the knuckle and means for securing the pivot pin to one of the knuckles, a bearing sleeve eccentrically mounted upon the pivot pin and secured to one of the knuckles, and a screw journaled on the sleeve and engaging the teeth of the shank of the movable jaw.

3. In a wrench, a stationary jaw having its body recessed to provide spaced knuckles, a movable jaw having a toothed shank arranged in a slot in the body of the stationary jaw and the teeth of its shank extending in the recess between the knuckles, both of said knuckles being provided with registering openings, the opening in one of the knuckles being threaded, said knuckle having its outer face formed with spaced depressions, a handle having a bifurcated end arranged on the outer faces of the knuckles, a pivot pin passing through openings in the end of the handle and through the openings in the knuckles, said pin having a threaded portion engaging with the threads in one of the said knuckles, a thumb screw upon the handle adapted to engage with one of the depressions in said knuckle, an eccentrically mounted bearing sleeve upon the pin between the knuckles, means for removably securing the sleeve to one of the knuckles, and an operating screw journaled upon the bearing sleeve and engaging with the teeth of the shank of the movable jaw.

In testimony whereof I affix my signature in presence of two witnesses.

JULIUS LERFALD.

Witnesses:

A. H. HILKE,
ESTHER McCORRY.