No. 748,527. PATENTED DEC. 29, 1903.

J. E. PETERSON.

WRENCH.

APPLICATION FILED MAY 28, 1903.

NO MODEL.

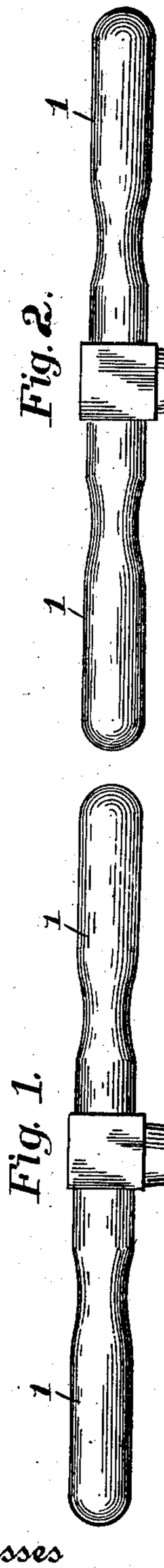


Fig. 1.

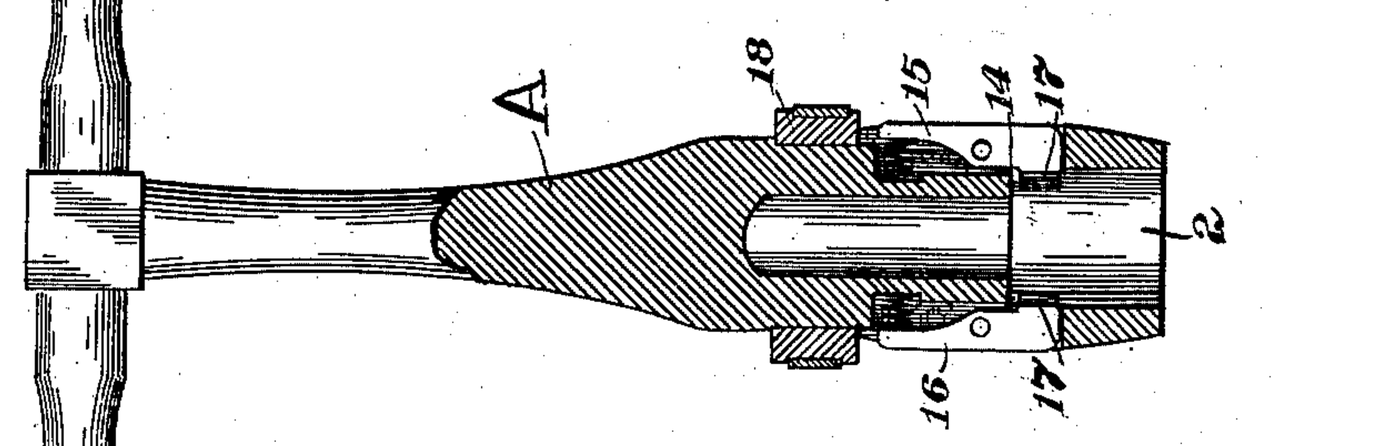


Fig. 2.

Fig. 3.

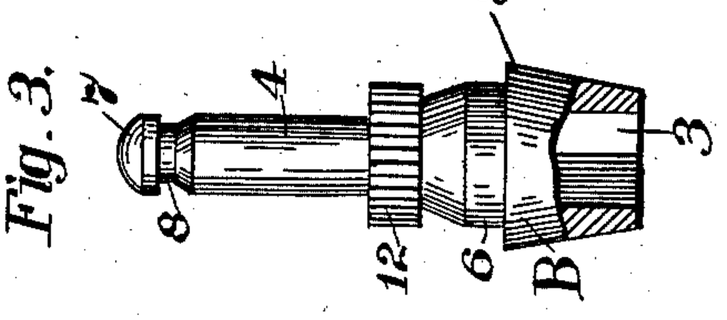


Fig. 4.

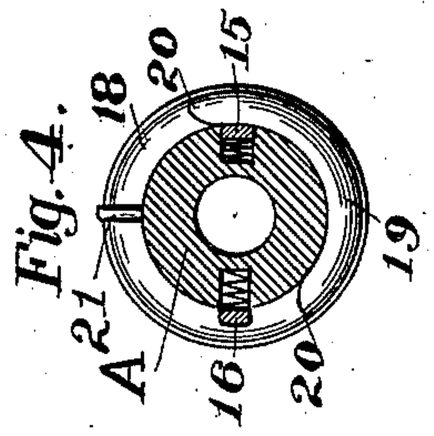
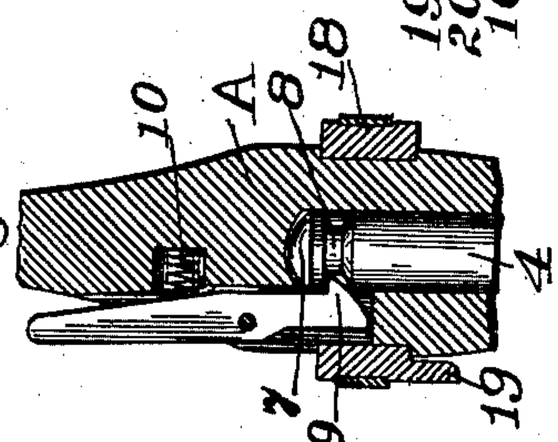


Fig. 5.



Witnesses

Milton Lenoir.

E. Edmonston Jr.

Inventor

John E. Peterson

by Clarence E. Hodges

his Attorney.

No. 748,527. Patented December 29, 1903.

UNITED STATES PATENT OFFICE.

JOHN E. PETERSON, OF OAKVILLE, PENNSYLVANIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 748,527, dated December 29, 1903.

Application filed May 28, 1903. Serial No. 159,210. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. PETERSON, a citizen of the United States, residing at Oakville, in the county of Cumberland and State of Pennsylvania, have invented a new and useful Improvement in Wrenches, of which the following is a specification.

My invention relates to an improvement in wrenches, and more particularly ratchet-wrenches, the object being to provide a simple and inexpensive wrench of the character named which can be adjusted to lock or "ratchet" in either direction by simply turning a collar on the outside of the wrench.

With the foregoing objects in view my invention consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation. Fig. 2 is a longitudinal section. Fig. 3 is a detached view of the jaw which engages and turns the nut. Fig. 4 is a transverse section, and Fig. 5 is a detail showing the dog 9 and spring 10.

A represents the body of the wrench, which may be of any length and dimension and is provided with a handle 1 at one end, by means of which it is turned and manipulated. The body portion is counterbored, as at 2, on two diameters, as shown in the sectional view.

B indicates the chuck-head or jaw, which is provided with a socket 3 in the outer end fashioned to receive the nut to be turned. The shank 4 of the chuck-head or jaw is reduced in diameter, so that a shoulder 5 is formed which engages the outer end of the wrench-body, and adjacent thereto is the bearing 6, which fits and turns in the bore of the body, thus centering the chuck-head or jaw and preventing lateral movement. The smaller end of the shank is fitted to the smaller bore of the body and adapted to turn therein, its length being such from the shoulder 5 to the extreme end, that it corresponds exactly to the length of the bore in the body portion of the wrench, so that the latter is just received therein. The extreme inner end of this shank is rounded or beveled, as at 7, and provided with a circumferential groove 8. A dog 9, pivoted to the body, is adapted to be forced aside by this rounded or tapering end of the shank when the latter is pushed in, after which the dog assumes a position within the circumferential groove 8, which it assumes by reason of the outward pressure of a spring 10 on the outer end of the dog. In this way the chuck-head or jaw is locked or retained in the bore of the wrench-body against being pulled or dropped out, at the same time admitting of its turning therein, and when occasion arises for removing it to put another size chuck-head or jaw in its place or for other purposes the protruding outer end of this dog is simply pressed inward by a thumb or finger, thus releasing the chuck-head or jaw and permitting it to be pulled out and removed.

About midway the length of the chuck-head or jaw a rack-wheel 12 is formed, the diameter of which is preferably the same as that of the bearing 6. The inner surface of this circular rack is adapted to bear on the shoulder 14, formed within the bore.

A pair of spring-actuated dogs 15 and 16 are pivoted at opposite points in the body portion and adapted to engage the teeth of this rack, their inner ends being beveled on corresponding sides, as at 17, whereby to ride over the teeth according to their adjustment or to lock them with the chuck-head or jaw to the body of the wrench rigidly in one direction or the other, according to their adjustment. A collar 18 is adapted to be turned to regulate these dogs, it being provided with an outwardly-projecting flange 19, the ends 20 20 of which are slightly beveled, the flange being adapted to ride over the outer ends of either of these dogs to remove the one thus engaged from the rack-teeth. Thus if the collar is turned to the left, for instance, the chuck-head or jaw is locked when turned to the right, and if the collar is turned in the reverse direction the jaw or chuck-head is locked when turned to the left, a stop 21 being provided to limit the movement of the collar. Then there is an intermediate position in which the flange does not engage either of the dogs, which thereby locks the chuck-head or jaw rigidly to the body of the wrench against turning in either direction.

Normally the main portion of the outer surfaces of the dogs is flush with the outer surface of the body portion of the wrench, and only the ends to be pressed inward pro-

trude beyond the surface, the surface of the body portion of the wrench usually being reduced or constricted at this point for this purpose.

From the foregoing it will be seen that the wrench comprises few parts and simple mechanism which is easily constructed and not liable to get out of order. At the same time the wrench works effectually in the performance of its functions and is especially well adapted to turn a nut where an ordinary wrench could not be used. A wrench thus constructed can be placed on the market at a comparatively small cost, and at the same time, though its mechanism be simple, the work accomplished is an essential factor, as it is performed most effectually.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a body portion suitably counterbored, and dogs pivoted thereto, of a chuck-head or jaw rotatably supported in the bore and provided with a rack-wheel adapted to be engaged by the dogs, and a collar having means thereon for operating one dog or the other according to the direction in which it is turned whereby to lock the chuck-head or jaw against turning in either direction.

2. The combination with a counterbored body portion, and a flanged collar adapted to turn thereon, of a chuck-head or jaw, and dogs pivoted to the body portion for locking the chuck-head or jaw against turning at all or in a predetermined direction accordingly as the collar is moved away from both dogs or in contact with one or the other.

3. The combination with a counterbored body portion, and a chuck-head or jaw having a shank fitted to the counterbore and capable of turning therein, said shank having a tapered inner end and a circumferential groove adjacent thereto, of a dog pivoted to the body portion in position to be forced aside by the end of the shank and to drop into the circumferential groove when the latter is in position to receive it whereby the chuck-head or jaw is locked rotatably to the body portion.

4. The combination with a counterbored body portion, and a chuck-head or jaw having a shank fitted to and capable of turning in the counterbore, of three dogs pivoted to the body portion, one of which is adapted to lock the chuck-head or jaw rotatably in place and the other two to prevent its turning altogether, or limit its turning motion to one direction or the other.

5. The combination with a counterbored body portion, and a chuck-head or jaw having a shank fitted to and capable of turning in the counterbore, of three dogs pivoted to the body portion, one of which is adapted to lock the chuck-head or jaw rotatably in place and the other two to prevent its turning altogether, or limit its turning motion to one direction or the other, and a collar movable on the body portion for operating the locking-dogs.

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

JOHN E. PETERSON.

Witnesses:
FRANK E. NEWTON,
D. WEBSTIR KOUGH.