No. 663,970. Patented Dec. 18, 1900.

L. H. KROKE.

WRENCH.

(Application filed June 29, 1900.)

(No Model.)

Fig. 1.

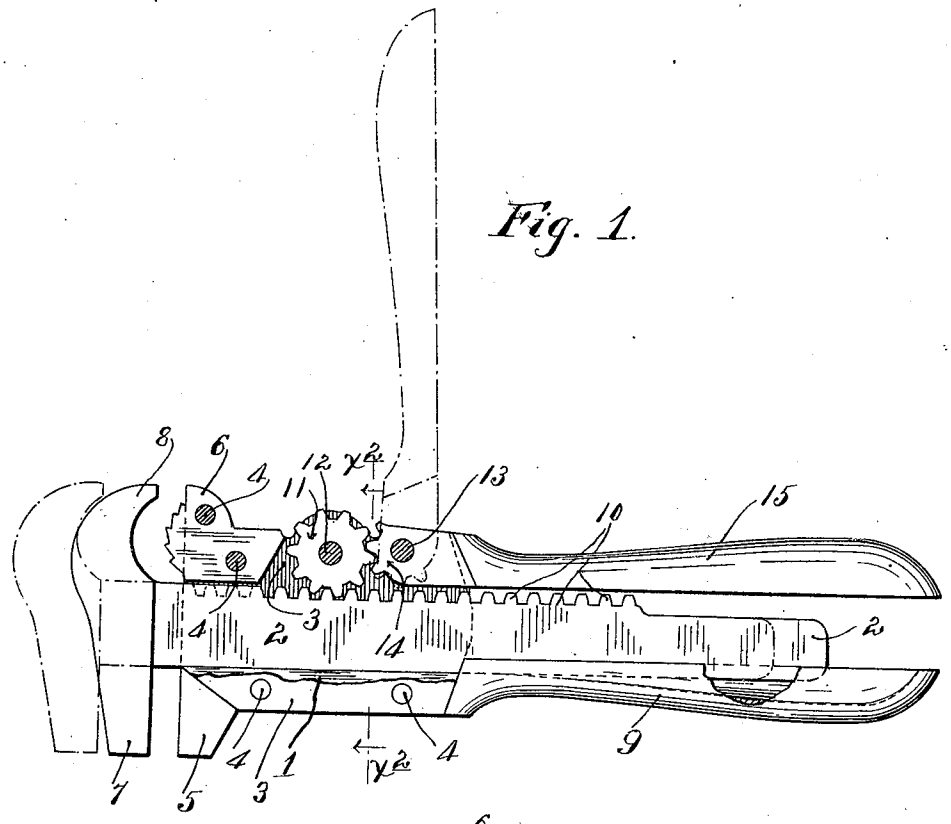
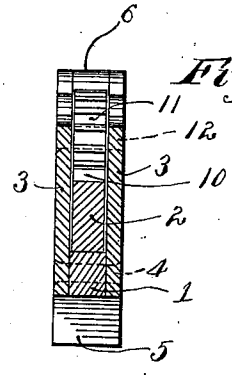


Fig. 2.



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UNITED STATES PATENT OFFICE.

LEWIS H. KROKE, OF DWIGHT, NORTH DAKOTA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 663,970, dated December 18, 1900.

Application filed June 29, 1900. Serial No. 22,036. (No model.)

To all whom it may concern:

Be it known that I, LEWIS H. KROKE, a citizen of the United States, residing at Dwight, in the county of Richland and State of North Dakota, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention has for its object to provide an improved wrench; and to this end it consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout both views.

Figure 1 is a plan view of my improved wrench, some parts thereof being broken away; and Fig. 2 is a transverse section on the line x^2 x^2 of Fig. 1.

The wrench comprises a pair of members 1 and 2, the latter telescoping into the former and the former having, as shown, removable side plates 3, held by rivets 4. The member 1 is provided with jaws 5 and 6, while the member 2 is provided with coöperating jaws or head portions 7 and 8, respectively. The jaws 5 and 7 cooperate when the wrench is used as a monkey-wrench, while the jaws 6 and 8 coöperate when the device is used as a pipe-wrench. The outer member 1 is further provided with a handpiece 9, while the member 2 is further provided with a longitudinally-extended series of rack-teeth 10. A spur-pinion 11, mounted on a pin 12 between the sides 3 of the member 1, constantly meshes with the rack formed by the teeth 10. Also pivoted between the side plates 3 of the member 1, but on the pin 13, is a segmental pinion 14, which is provided with an extended lever or handpiece 15, preferably extended in length and having a form corresponding approximately to the handpiece 9 of said member 1. The pinions 11 and 14 are so spaced that they are adapted to mesh, and the teeth of the said segmental pinion 14 are so related to the handpiece 15 that when the said handpiece is turned to an extreme outward position (indicated in Fig. 1 by dotted lines) the said teeth of the said segmental pinion will be turned below and out of engagement with the teeth of the pinion 11. The pinion 11 being thus free from the segmental pinion 14, the wrench member or section 2 may be freely moved inward or outward.

The above construction permits of very quick adjustments of the wrench to nuts, pipes, or other devices varying greatly in size. In applying the wrench to the nut or pipe the coöperating jaws are loosely set against the same and then the handpiece 15 is turned downward, so as to engage the teeth of the pinions 11 and 14, and thereby draw the member 2 inward and the coöperating jaws of the members 1 and 2 onto their work. As is evident, the more tightly the handpieces 9 and 15 are pressed or drawn toward each other the more tightly the work will be clamped by the coöperating jaws.

The pinion 11 may be of greater diameter than the segmental pinion 14, so as to multiply the clamping power of the wrench. The said pinion 11 also serves to transform the movement of the handpiece 15 and pinion 14 in the proper direction to draw the member 2 inward with respect to the member 1. It will, however, be understood that this invention is capable of considerable modification.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a wrench, the combination with a pair of members slidable one upon the other, and one thereof having a rack, of a pinion and a lever mounted on the other member, which pinion meshes with said rack and which lever has teeth engageable with said pinion when said lever is closed and disengageable with said pinion when said lever is open to an extreme position.

2. In a wrench, the combination with the member 1, of the member 2 telescoping into said member 1 and provided with rack-teeth 10, said members having coöperating clamping-jaws, the pinion 11 mounted in the sides of said member 1 and meshing with said rack 10, and the lever 15 pivoted between the sides of said member 1 and provided with the segmentally-arranged gear-teeth 14, engageable and disengageable with said pinion 11 under the movements of said lever 15, substantially as described.

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

LEWIS H. KROKE.

Witnesses:
H. C. N. MYHRA,
C. A. MCKEAN.