

No. 752,136.

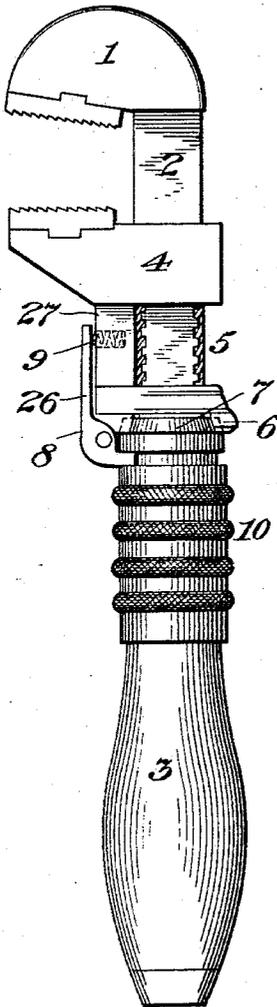
PATENTED FEB. 16, 1904.

M. WENGER.  
WRENCH.

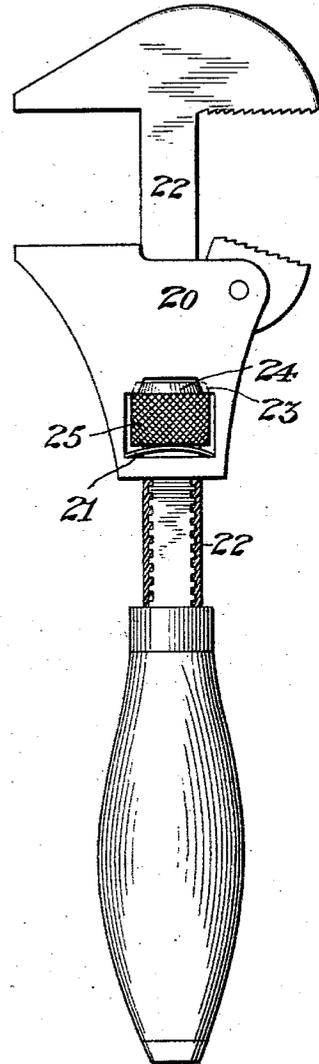
APPLICATION FILED NOV. 22, 1902.

NO MODEL.

*Fig. 1.*



*Fig. 2.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

MILTON WENGER, OF NEW HOLLAND, PENNSYLVANIA.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 752,136, dated February 16, 1904.

Application filed November 22, 1902. Serial No. 132,355. (No model.)

*To all whom it may concern:*

Be it known that I, MILTON WENGER, a citizen of the United States, residing at New Holland, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to improvements in wrenches, and has for its object to produce a wrench which, while it is of inexpensive construction, will be formed to be much lighter, of quicker action, and more reliable than many of the wrenches now in use. It also has for its object to provide a segmental cone-clutch for the adjusting mechanism to prevent the screw from turning and relaxing the hold of the jaws when the wrench is set on a nut or other object which it may be required to turn. It has also for its object to provide mechanism which will hold the parts of said clutch in such position that it will not interfere with the normal action of said adjusting mechanism. It also has for its object divers other novel features, which will be hereinafter more fully set forth and described.

The nature of the invention consists in substituting an interrupted or partial conical socket for the clutch in the adjusting mechanism in place of the integral socket now in use.

The invention consists also in providing a novel rigid bearing for said clutch.

The invention also consists in divers other novel features, which will be fully understood from the following general description and the annexed drawings and will be subsequently pointed out in the claims.

In the drawings, Figure 1 is a side view of one kind of a wrench embodying my invention. Fig. 2 is a side view of still a different form of wrench, but still embodying my invention.

Corresponding parts in all the figures are denoted by the same reference characters.

In Fig. 1 of the drawings, 1 designates the stationary jaw of the wrench, 2 the shank, and 3 the handle. On the edge of shank 2 is cut the usual interrupted screw-thread forming racks 5, upon which works the nut 10. This nut has a conical top 7. 6 designates a partial or interrupted conical socket which en-

gages the conical top 7. This socket is formed 50 as if the sides of a common conical socket had been so far cut away as to leave only two opposite segmental bearings remaining. These must be of sufficient strength and are attached to the movable jaw 4 by the bracket 27. The 55 bent lever 26 normally rests with its shorter and lower end in a groove cut in the nut 10, is pivoted at 8, and with its longer and upper end rests on the spring 9, which is let into the bracket 27. All the other parts of this 60 wrench are of common and well-known form.

This wrench is to be used in the common and well-known way; but it will be found in use that the interrupted or partial conical socket 6, bearing on the head 7, will form as effect- 65 ive a clutch as if the socket were entire and at the same time to be much lighter, neater, and fully as strong. When the jaws of the wrench are set upon a nut or other object to be turned, the pressure upon the cone and 70 interrupted socket will be just the same as if the socket were entire, and as on account of the fact that as the surface on which the segments bear is smaller than supports the pressure in an entire socket the total pressure 75 and friction upon the segments will be equal to that which would be obtained upon an entire socket. If it for any reason be desirable to have the adjusting-nut and the socket separated, this may be accomplished by pressing 80 on the longer end of the lever 26. This lifts the conical end of nut 10 from the socket and leaves the socket and its accompanying integral mechanism free to be slipped wherever it 85 may be required.

In Fig. 2 the sliding jaw 20 and the threaded shank 22 are of common and well-known form, except that the said jaw is formed with an interrupted conical socket 23. The thumb-nut 25, which works on the threaded shank 90 22, is formed with a conical extension 24, which works in the segmental socket 23. This thumb-nut also works in a mortise in the sliding jaw. Between the lower end of this nut 95 21 and the wall of said mortise is placed the spring 21 to maintain the proper pressure in the socket 23. The other parts of this wrench are of common and well-known form.

It will be observed that in all these cases the clutch is a cone acting in an interrupted socket and that in all cases the action and effect is the same. I do not, however, confine myself strictly to the construction and arrangement hereinbefore shown and described, as it is evident that under the scope of my invention I am entitled to slight variations of structure and arrangement.

10 Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A wrench, comprising a shank, a rack thereon, a fixed jaw, a slidable jaw, a conical recess in said slidable jaw, a threaded nut rotatable on said rack, and a conical bearing on said nut adapted to engage the recess in the slidable jaw, substantially as described.

2. A wrench comprising a shank, a rack thereon, a fixed jaw, a slidable jaw, a conical recess in said slidable jaw, a threaded nut rotatable on said rack, a conical bearing on said nut adapted to engage the recess in the slidable jaw, and a spring-actuated device for normally pressing said bearing into engagement with its recess, substantially as described.

3. A wrench, comprising a shank, a rack thereon, a fixed jaw, a slidable jaw, a conical recess in said slidable jaw, a threaded nut rotatable on said rack, a conical bearing on said nut adapted to engage the recess in the slidable jaw, and a pivoted spring-actuated device for normally pressing said bearing into

engagement with its recess, substantially as described.

4. A wrench, comprising a shank, a rack thereon, a fixed jaw, a slidable jaw, a conical recess in said slidable jaw, a threaded nut rotatable on said rack, a conical bearing on said nut adapted to engage the recess in the slidable jaw, and a pivoted spring-actuated lever for engaging said rotatable nut and normally pressing the bearing thereon into engagement with its recess.

5. In a wrench having sliding jaws, the combination with a screw and rack adjusting mechanism for said jaws, of a friction-clutch device normally acting to prevent rotation of the screw and a lever adapted to be engaged by the hand to free said friction-clutch device when desired.

6. In a wrench having sliding jaws, the combination with a screw and rack adjusting mechanism for said jaws, of a friction-clutch device, a spring acting to normally hold the friction-surfaces in contact and a lever adapted to be engaged by the hand to free said friction-surfaces when desired.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

MILTON WENGER.

Witnesses:

L. M. STORB,  
JAMES SEILLER.