

No. 685,282.

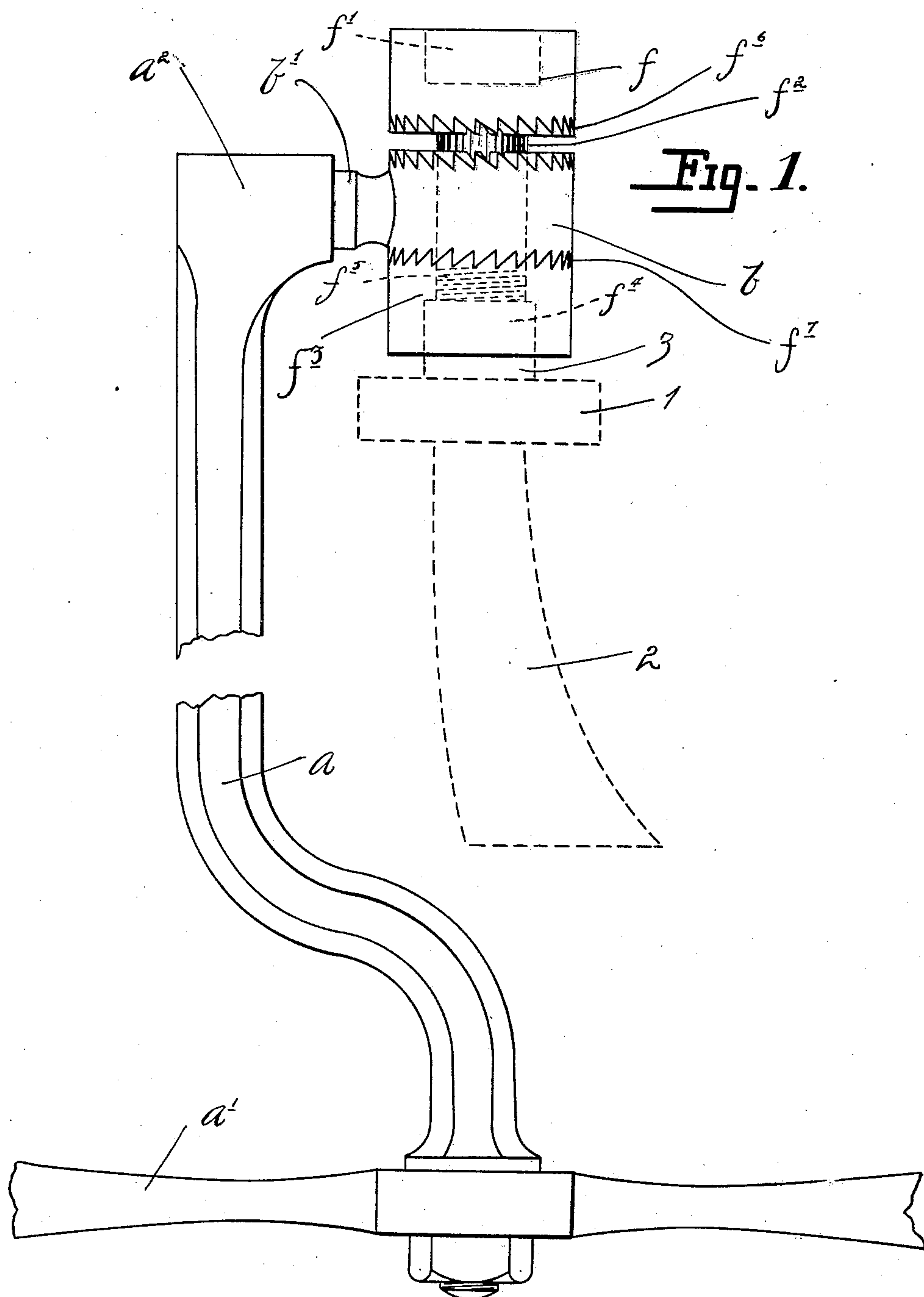
Patented Oct. 29, 1901.

J. P. JOHNSON.
CYLINDER WRENCH.

(Application filed Feb. 4, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
C. H. Turner.
Harry Kilgore.

Inventor
John P. Johnson.
By his Attorneys.
William M. Mercha

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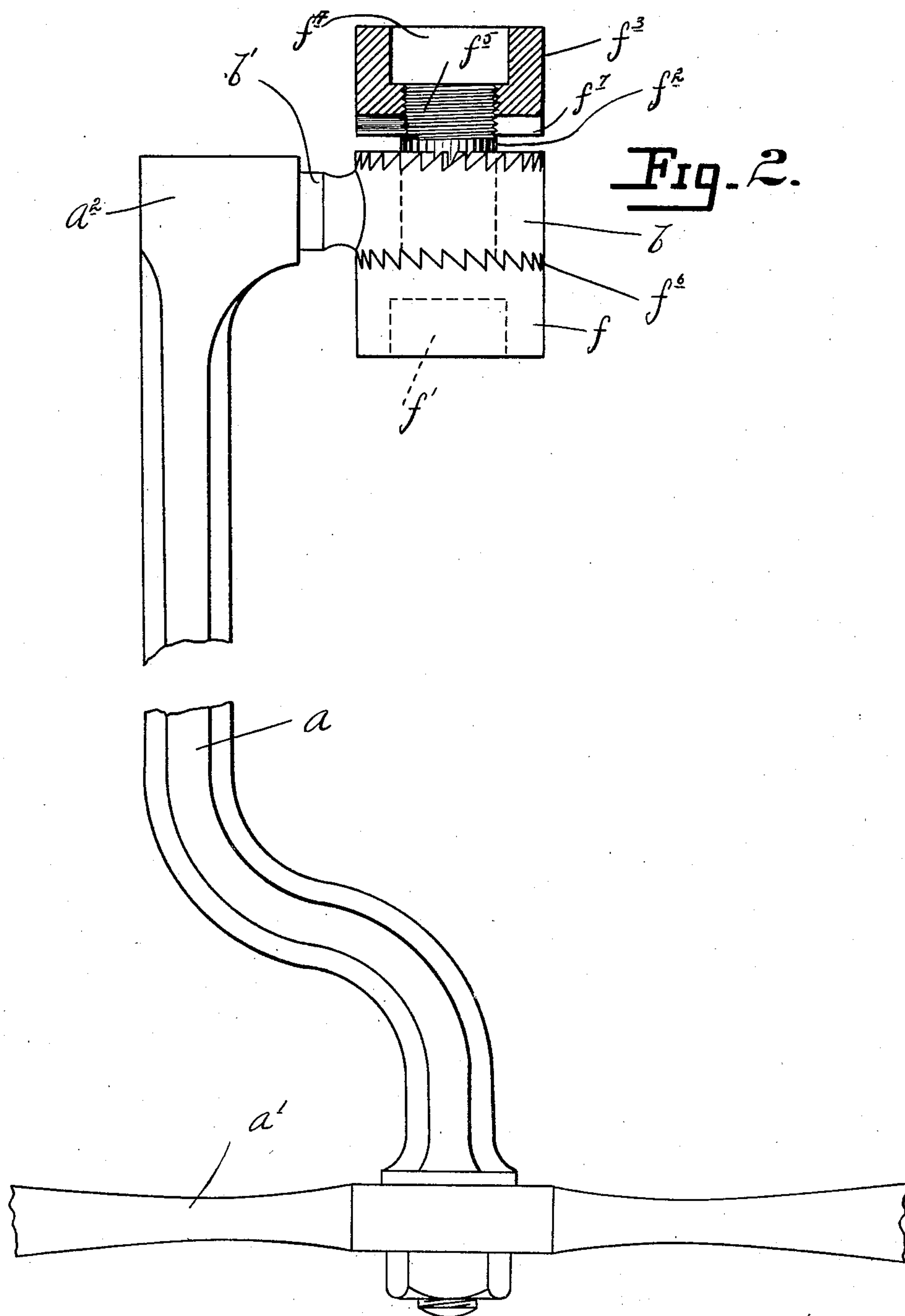
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UNITED STATES PATENT OFFICE.

JOHN P. JOHNSON, OF STORDEN, MINNESOTA.

CYLINDER-WRENCH.

SPECIFICATION forming part of Letters Patent No. 685,282, dated October 29, 1901.

Application filed February 4, 1901. Serial No. 45,874. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. JOHNSON, a citizen of the United States, residing at Storden, in the county of Cottonwood and State of Minnesota, have invented certain new and useful Improvements in Cylinder-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 cylinder-wrench of simplified construction, reduced cost, and increased durability and strength.

To the above ends the invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The uses of a so-called "cylinder-wrench" are well understood by all persons familiar with threshing-machines. For the benefit of those who are not familiar with such mechanism it may be stated that the cylinder-teeth are secured to the cylinder-bars by means of nuts screwed against the inner sides of the bars. The wrench must therefore engage the nut and at the same time clear and work between the bars and be able with a ratchet action both to tighten up and loosen the nuts. This has before been accomplished by the use of various pawl-and-ratchet devices, which while doing the work in quite a satisfactory manner are quite liable to be broken or to get out of order, and, furthermore, are often unnecessarily expensive.

My improved wrench is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout both views.

Figure 1 is a view in side elevation, showing my improved wrench in operative position, a cylinder-bar, a tooth, and a nut being indicated by dotted lines; and Fig. 2 is a side elevation of the said wrench, some parts being sectioned and the nut-socket being turned or reversed end for end with respect to Fig. 1.

In Fig. 1 the numeral 1 indicates one of the bars of a threshing-cylinder, the numeral 2 indicates a cylinder-tooth, and the numeral 3 indicates a nut on the shank of the tooth 2 for securing the same to the bar 1.

The character α indicates the crank-like

wrench-stem, which is provided at its crank end with a hand-bar α' .

The character b indicates a heavy ratchet-toothed ring, which is provided both at its upper and lower faces with ratchet-teeth which extend in the same direction circumferentially thereof—that is, both series of teeth will drive in the one direction and slip in the other. The ratchet-ring b is provided with a heavy radially-projecting stem or stud b' , which is swiveled in a suitable seat α^2 at the free end of the crank α .

The character f indicates a nut-engaging socket or head suitably recessed to engage the nut, as indicated at f' , and provided with a heavy axially-projecting stud f^2 , which works loosely through a central perforation in the ratchet-ring b . A similar nut-engaging socket or head f^3 , recessed to receive the nut, as shown at f^4 , is screwed onto the projecting end of the stud f^2 , as indicated at f^5 . The sockets f and f^3 are so spaced apart that there is considerable play between the same and the teeth of the ring b . On their inner faces the sockets f and f^3 , respectively, are provided with ratchet-teeth f^6 , f^7 , adapted to engage and coöperate with the adjacent ratchet-teeth of the said ratchet-ring b . It of course follows from what has been said respecting the teeth of the ratchet-ring b that the ratchet-teeth f^6 and f^7 are inclined in the same circumferential direction.

The operation, which is very simple, may be briefly described as follows: The wrench is applied to the nut substantially as shown in Fig. 1, and when the crank-stem α and handpiece α' are vibrated backward and forward within the limits permitted by the bar α the sockets f and f^3 and the nut 3 will be moved in the direction indicated by the arrow in Fig. 1. In this position it will be noted that it is the socket marked f that engages the nut 3. To turn the nut in the opposite direction, the ratchet-ring b and parts carried thereby are given a half-rotation on the axis of the stud b' and the socket f^3 is engaged with the nut. Then under the oscillations of the crank-stem α the nut will, as is obvious, be turned in a direction reverse from that indicated in Fig. 1, or in the direction indicated by the arrow marked on Fig. 2. It is further evident that with the ring b and parts car-

ried thereby projecting in a certain direction the sockets f and f^3 will be rotated in a certain determined direction regardless of which socket is acted upon by the ratchet-ring.

5 The actions of the ratchet devices are reversed simply by turning the ratchet-ring so as to project the nut-socket in reverse directions.

The above device dispenses with all small
10 parts—such as pawls, springs, &c.—reduces the number of parts, and provides parts all of which are very strong and durable. As the various parts may be drop-forged or cast, (preferably from steel,) the cost of the device
15 is reduced approximately to the minimum consistent with efficiency.

It will of course be understood that the ring b being swiveled in the so-called "crank-stem" a permits the sockets to be turned at
20 various angles to said stem a for proper engagement with the nuts. It will of course be understood that the wrench may be put to a great many other uses than those indicated in the above description.

25 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 ratchet-ring having teeth on its opposite
30 faces, of a double ended or headed socket member mounted for rotary and axial move-

ment with respect to said ratchet-ring, and provided with opposing ratchet-teeth for cooperation with the ratchet-teeth of said ratchet-ring, substantially as described.

2. In a cylinder-wrench, the combination 35 with a crank-stem and handpiece, of a double-faced ratchet-ring swiveled to said crank-stem, and a double-headed nut-socket having ratchet-teeth on its opposing portions and provided with a connecting stud or stem mounted 40 in said ratchet-ring with freedom for rotary and axial movements, substantially as described.

3. In a cylinder-wrench, the combination 45 with a crank-stem and handpiece, of the double-faced ratchet-ring b having the stud or stem b' swiveled in the end of said crank-stem, and the double-headed-socket member f, f^3 having the connecting-stud f^2 mounted in said ring b for rotary and axial movements, 50 said heads f and f^3 having respectively the ratchet-teeth f^6 and f^7 , said parts operating substantially as described.

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

JOHN P. JOHNSON.

Witnesses:

ANNE S. READ,
F. D. MERCHANT.