B. S. HYERS.
Pipe-Wrench.

No. 207,182. Patented Aug. 20, 1878.

Fig. 1.

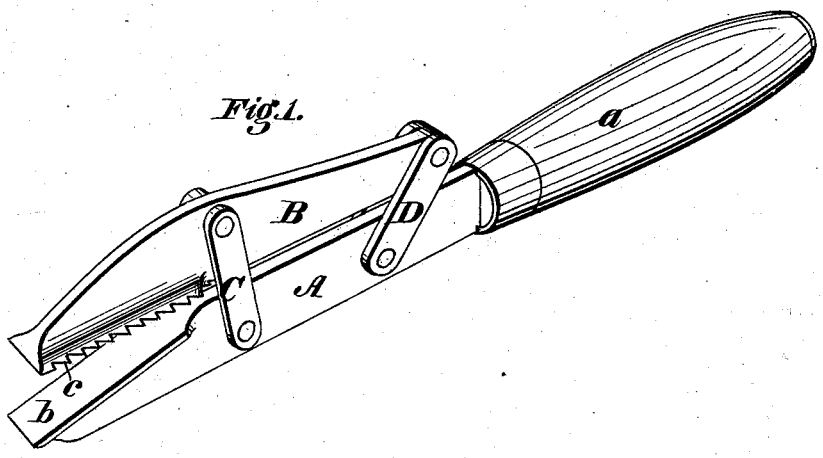


Fig. 2.

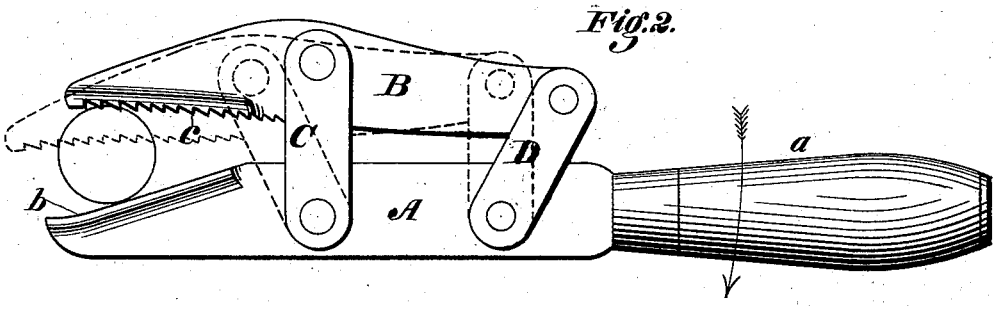
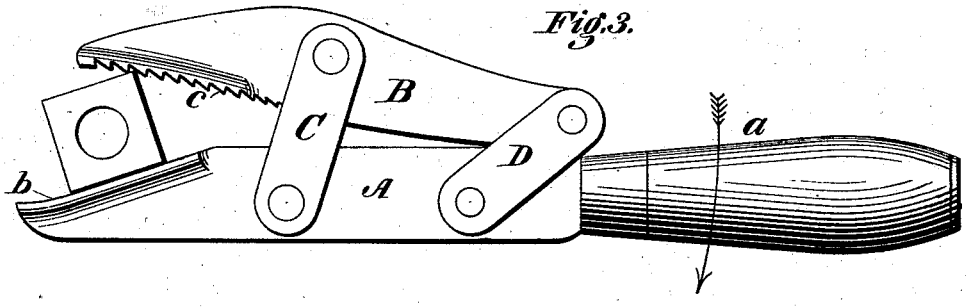


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

BENJAMIN S. HYERS, OF PEKIN, ILLINOIS.

IMPROVEMENT IN PIPE-WRENCHES.

Specification forming part of Letters Patent No. **207,182**, dated August 20, 1878; application filed June 8, 1878.

To all whom it may concern:

Be it known that I, BENJAMIN S. HYERS, of Pekin, county of Tazewell, State of Illinois, have invented certain Improvements in Pipe and Nut Wrenches, of which the following is a specification:

My invention relates to an improved pipe and nut wrench consisting of two bars or jaws, connected with each other by means of two links or pairs of links, arranged at an inclination to each other, whereby the jaws are caused to move out of parallel lines, to separate widely, and to act with greater force and efficiency than could otherwise be secured.

Figure 1 represents a perspective view of my wrench; Fig. 2, a side elevation of the same; Fig. 3, a view showing the manner of applying the wrench to square and other nuts.

In the drawing, A represents a bar or stock, having at one end a smooth face or jaw, *b*, beveled or inclined in relation to the body of the bar, and having at the opposite end a handle, *a*, by which the wrench is held and manipulated. B represents a second bar or jaw, having one end provided on the inside with a toothed face, *c*, the teeth being tempered to a great degree of hardness and beveled on the outer side so as to give them sharp cutting-edges. The bars A B are connected by means of two pairs of links, C and D, the former pivoted to the bars, respectively, at or near the middle, and the latter at the rear end of the jaw B. As shown in the drawing, the links C D are not arranged parallel with each other, but at an angle or inclination, the ends which are attached to the jaw B being separated to a greater extent than those which are attached to the bar A, the links D being given a greater inclination or obliquity than the links C, as shown.

The effect of this arrangement is to cause the jaw B to have a rocking or rolling motion in relation to the bar A as it is moved endwise, to cause the two jaws to move out of a parallel line, and to cause their forward ends to separate as the jaw B is moved backward toward the handle.

In practice it is found that the wrench constructed as above described will, upon being applied to either a round or square object, and having its handle moved in the direction indicated by the arrow in Fig. 2, grasp the object with great firmness, the smooth jaw permitting the object to be wedged closely between the two jaws, so as to engage with the teeth *c*, whereupon the rotation of the wrench causes the jaw B to be drawn forward and forced inward by means of the links with great pressure upon the object upon which it is engaged.

I am aware that a wrench consisting of the two parallel bars or jaws united by two parallel links is old, and I lay no claim thereto; but in practice I find that by the use of the diverging links I secure a greatly-improved action of the parts, and that the wrench, by reason of the wider opening of the jaws, is adapted to receive objects of much larger size than those having the parallel jaws. I also find that the use of the diverging links enables the wrench to hold with far greater firmness and rigidity than those in which the links are parallel.

Having thus described my invention, what I claim is—

1. A wrench consisting of the jaws A B, united by links C D, arranged at an angle or inclination to each other, substantially as described and shown.

2. The combination of the toothed jaw B, the main jaw or body A, having a smooth inclined face, *b*, and connecting-links C D, having the points of attachment to the jaw B a greater distance apart than the points of their attachment to the jaw A, as and for the purpose described.

BENJAMIN S. HYERS.

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