

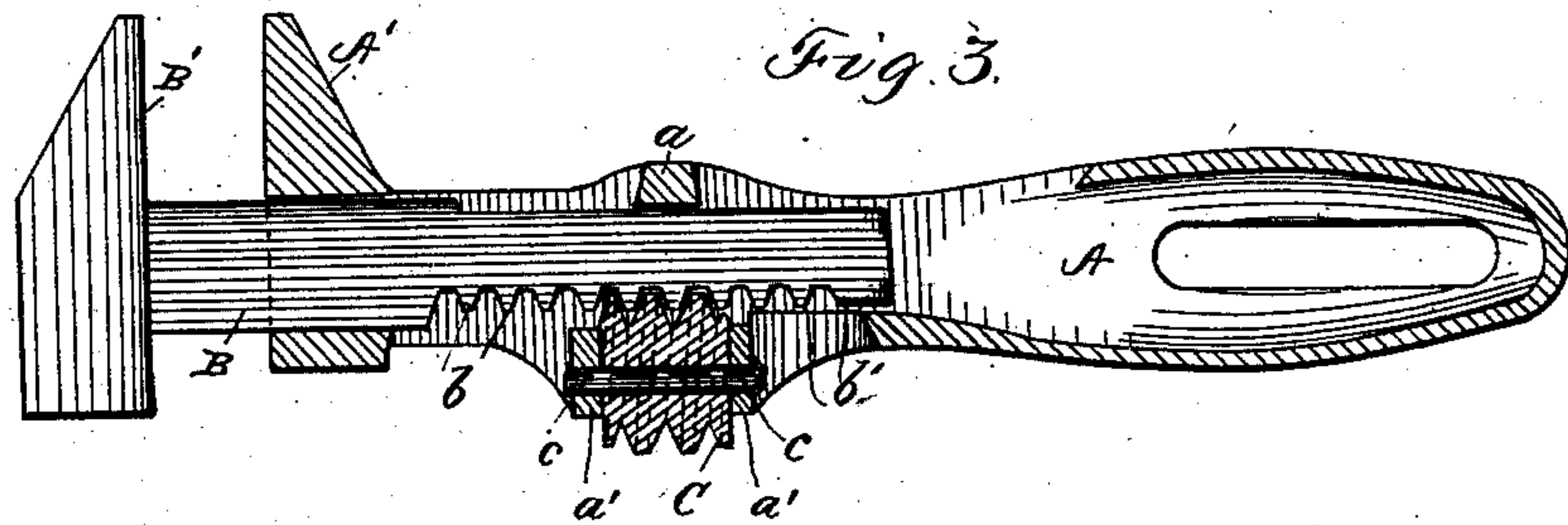
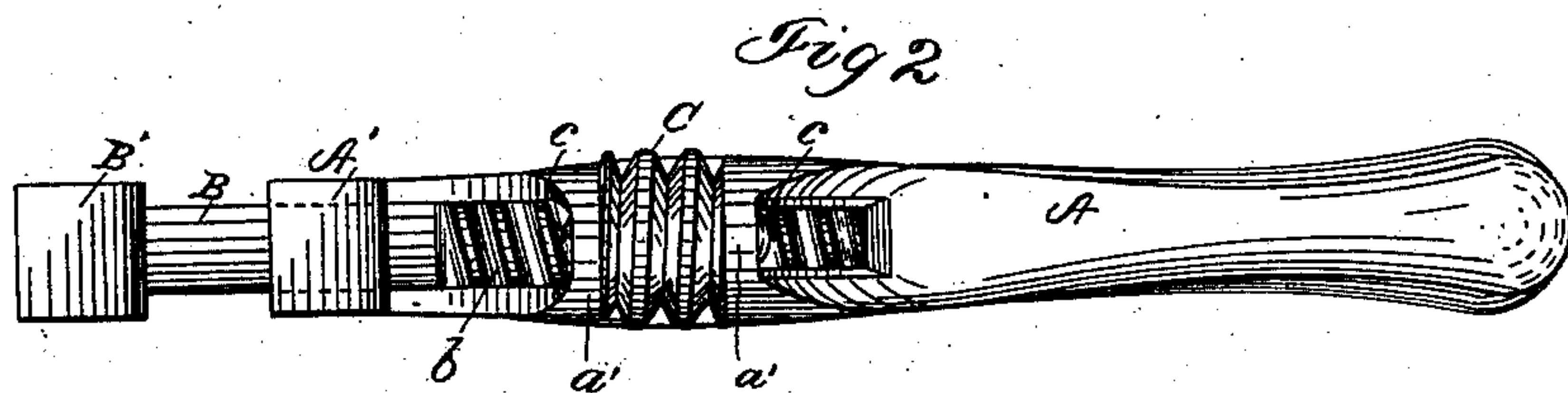
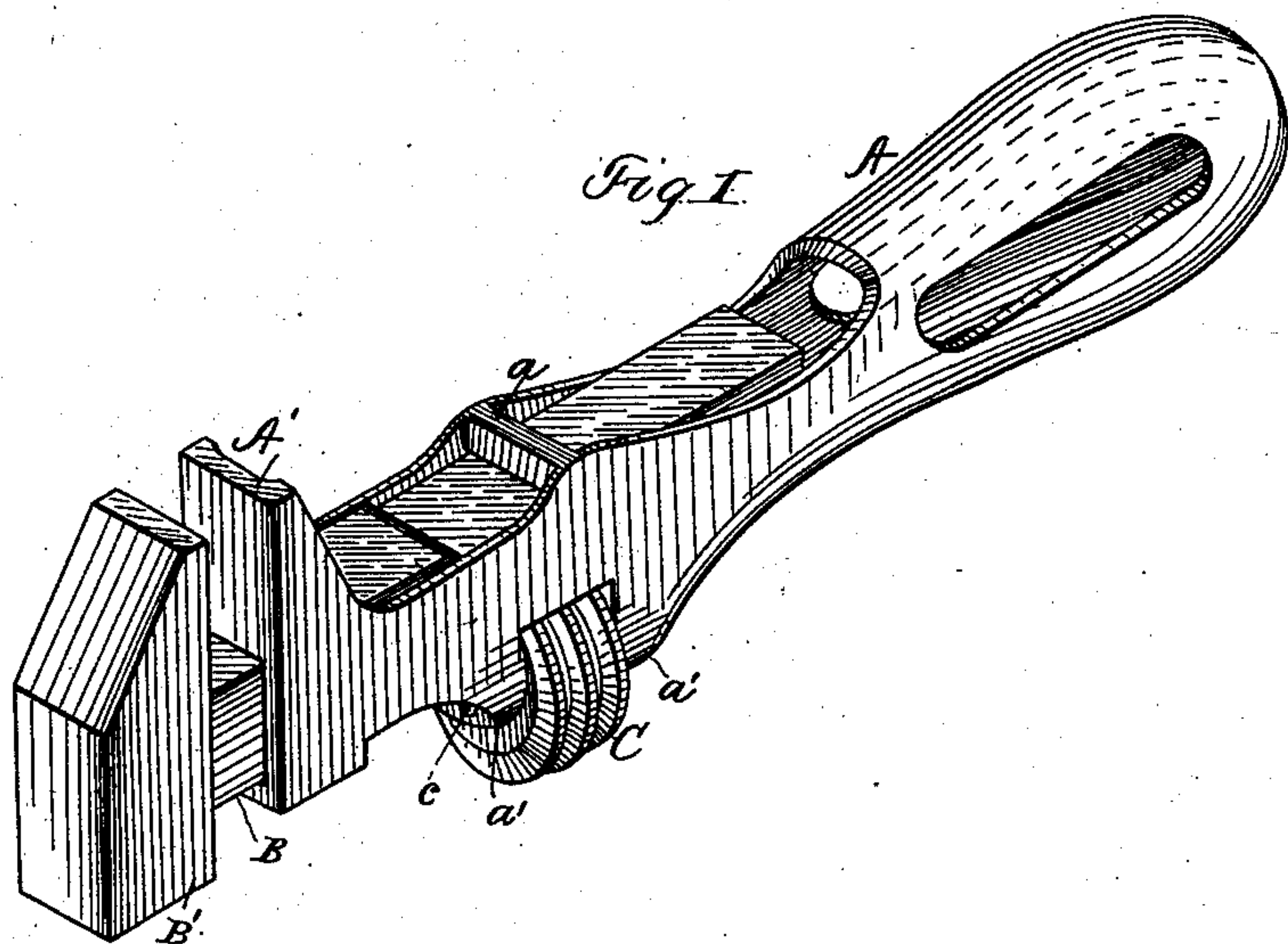
(No Model.)

C. H. MILLER.

MONKEY WRENCH.

No. 291,213.

Patented Jan. 1, 1884.



Witnesses.

W. R. Edson.

R. H. Porter.

Inventor

Chas. H. Miller

Per Hallock & Hallock

Att's

# UNITED STATES PATENT OFFICE.

CHARLES H. MILLER, OF ERIE, PENNSYLVANIA, ASSIGNOR TO THE LOVELL MANUFACTURING COMPANY, (LIMITED,) OF SAME PLACE.

## MONKEY-WRENCH.

SPECIFICATION forming part of Letters Patent No. 291,213, dated January 1, 1884.

Application filed June 9, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. MILLER, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Monkey-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.

This invention relates to that class of wrenches in which one of the jaws is movable, so as to accomodate nuts of varying size, said adjustment being effected by a thumb or worm nut, and are commonly known as "monkey-wrenches;" and it consists in providing a new and improved construction of the same.

The object of the invention is to cheapen the construction by reducing the amount of work to be expended on the construction to the lowest possible point.

In the device here shown the whole consists of three parts and a rivet. All the three parts are made of malleable cast-iron, and require no more labor to prepare them for use than that incident to casting and malleableizing, further than drilling the hole for the aforesaid rivet. The total cost of work to be expended on the castings after they are ready for use will not exceed more than one-half cent. This will be fully understood from the following general description.

The wrench is illustrated in the accompanying drawings as follows:

Figure 1 is a perspective view. Fig. 2 is a plan view of the back of the wrench. Fig. 3 is a side view, with the handle in section longitudinally.

A is the handle or body of the wrench, and carries as part of it the fixed jaw A'.

B is the movable stem of the wrench, and carries as part of it the movable jaw B'.

On the back of the movable stem B are the notches *b*, with which the worm-wheel C gears or meshes. The body A, the movable part B B', and the worm-wheel C are all formed by casting. The body A is made hollow to receive the part B, and has on its back ears or lugs *a' a'* to receive the worm-wheel C and rivet *c*. The body is made open as much as possible to avoid undue weight, the tie *a* being left to prevent spreading and to hold the part B in place.

As before stated, the only machine-work on the wrench is to drill the hole for the rivet *c* through the ears *a' a'* and the worm-wheel.

The wrench is put together by putting the part B in place in the body A and putting the worm-wheel in place and riveting the end of the axis *c* of the worm-wheel.

What I claim as new is—

In a monkey-wrench, the combination, substantially as shown, of the following elements: a body or handle, A, having a longitudinal opening or cavity to receive the movable part, the fixed jaw A', and the worm-wheel supports *a' a'*, the movable part consisting of a bar or stem, B, with worm-wheel notches or teeth *b* on its back, and the movable jaw B', and finally the worm-wheel C, mounted between the supports or ears *a' a'* on the rivet *c*, and meshing with the teeth *b* on the said movable part.

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

CHARLES H. MILLER.

Witnesses:

JNO. K. HALLOCK,  
ROBT. H. PORTER.