(No Model.)

C. H. MILLER.

MONKEY WRENCH.

No. 260,771. Patented July 11, 1882.

Fig. 1.

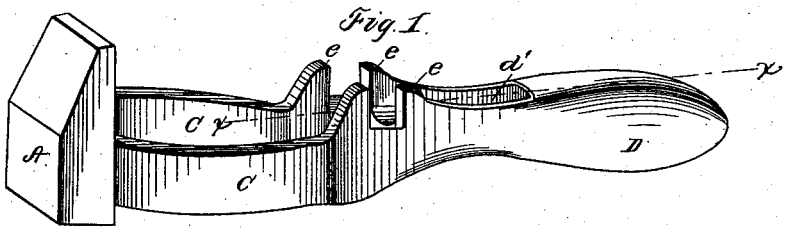


Fig. 2.

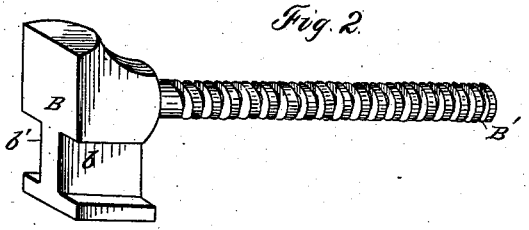


Fig. 3.

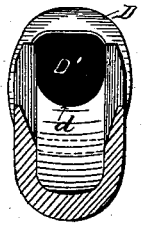


Fig. 4.

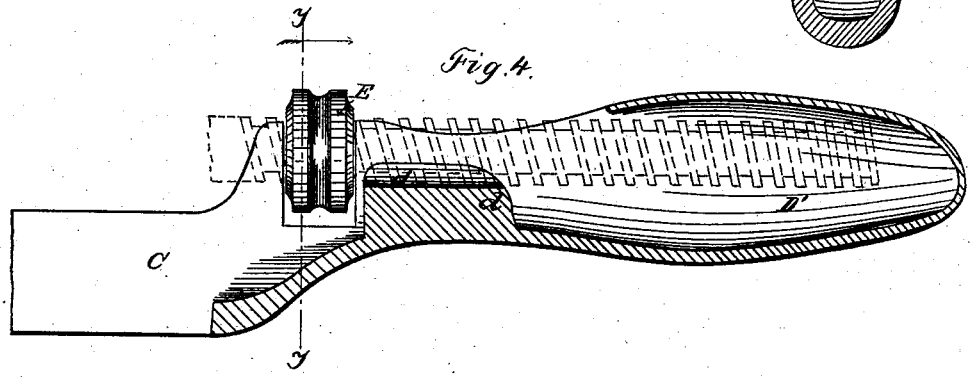


Fig 6

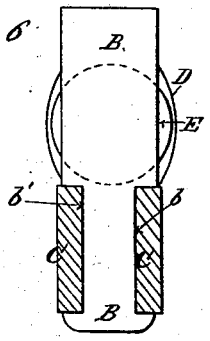
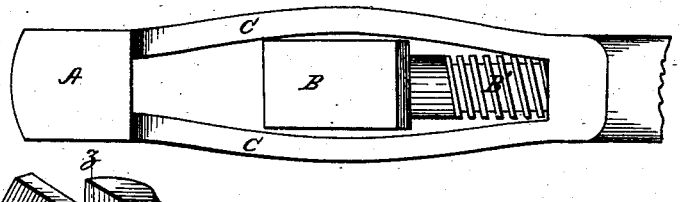


Fig. 7.



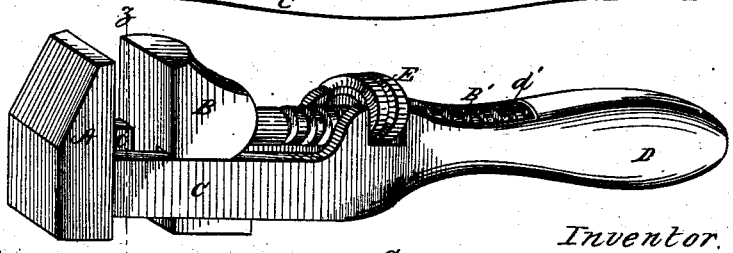


Fig. 5.

Witnesses.
W. R. Edelen, Jr.
Robt H. Porter.

Inventor.
C. H. Miller.
Per Wallock & Hallock
Att's

UNITED STATES PATENT OFFICE.

CHARLES H. MILLER, OF ERIE, PENNSYLVANIA.

MONKEY-WRENCH.

SPECIFICATION forming part of Letters Patent No. 260,771, dated July 11, 1882.

Application filed December 21, 1881. (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 new and useful Improvements in Monkey-Wrenches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and the letters or figures of reference marked thereon.

My invention relates to the construction of that class of wrenches which are provided with a movable jaw, and are commonly known as "monkey-wrenches;" and it consists in making certain useful improvements in the construction of the same, whereby a very strong and cheap wrench can be made almost wholly of cast metal.

My device is illustrated in the accompanying drawings as follows: Figure 1 is a perspective view of the casting which forms the stationary jaw, the neck, and the handle of the wrench, and which I denominate the "frame." Fig. 2 is a perspective view of the movable jaw and its screw-threaded stem. Fig. 3 is a vertical section through the frame on the line *y y* in Fig. 4. Fig. 4 is a longitudinal vertical section through the handle of the frame on the line *x x* in Fig. 1. Fig. 5 is a perspective view, reduced scale, of the wrench complete. Fig. 6 is a vertical section through the neck between the jaws on the line *z z* in Fig. 5. Fig. 7 is a plan view of the back of the neck and head at one of the stages of construction.

The letters of reference indicate parts as follows:

A is the stationary jaw or head; B, the movable jaw. C C is the neck on which the movable jaw slides. D is the handle; D′, the cavity in the handle. *d* is a thickening up of the metal in the throat of the handle to form a rest for the screw. *d′* is a slot on the front of the handle. E is the nut or worm-wheel. *e e e e* are lugs on the frame for holding the worm-wheel. B′ is the screw-stem of the movable jaw, and *b* and *b′* are notches in the movable jaw to receive the neck-pieces C C.

The construction of my device is as follows: The frame, which is the part shown in Fig. 1, is made of malleableized cast-iron, and is in the form shown when it comes from the foundry. The neck-pieces C C are shown to be bent out, which form is given to them in order to permit the passage of the movable jaw to its place. This jaw B comes from the sand in the form shown in Fig. 2, the stem B′ having been laid in the mold. It is put in place in the frame of the wrench as follows: The worm-wheel E is screwed onto the stem to near the jaw. The end of the stem is then put into the slot *d′* and up into the cavity D′, and the head of the jaw B is passed between the curved neck-pieces, as shown in Fig. 7, and the worm-wheel enters between the lugs *e*. The neck-pieces C C are then brought to a parallel by being compressed in a vise, which brings them into the side notches, *b b′*, in the jaw B, as is shown in Fig. 6. This tightly holds the movable jaw so it cannot escape; but of course it must be left loose enough so it can traverse back and forward easily when operated upon by the screw. The jaw is held against the force applied in using the wrench by the shoulders of the notches *b b′*, and is, in fact, stronger than when the neck is in one piece and passes through a hole in the jaw B.

The wrench being wholly made of cast-metal, (except, perhaps, the stem B′ and the nut E, which, however, may be of such metal,) the construction is very cheap, for the putting together is done very quickly.

What I claim as new is—

1. In a monkey-wrench, a frame consisting of the stationary jaw A, neck-pieces C C, and hollow handle D, formed of one piece of metal, substantially as shown.

2. In a monkey-wrench, a frame consisting of the stationary jaw A, neck-pieces C C, and hollow handle D, in combination with the movable jaw B, having notches *b b′*, screw-stem B′, and worm-wheel E, substantially as shown.

3. In a monkey-wrench, a frame consisting of a head or stationary jaw, A, neck-pieces C C, and hollow handle D, and having the lug *d* and lugs *e e e e*, formed of one piece of metal, substantially as shown.

In testimony that I claim the foregoing I have hereunto set my hand this 19th day of November, 1881.

CHARLES H. MILLER.

Witnesses:

JNO. K. HALLOCK,

C. SMALLEY.