A. A. SANBORN & C. BURROUGHS.

MONKEY-WRENCHES

No. 195,173. Patented Sept. 11, 1877.

Fig. 1.

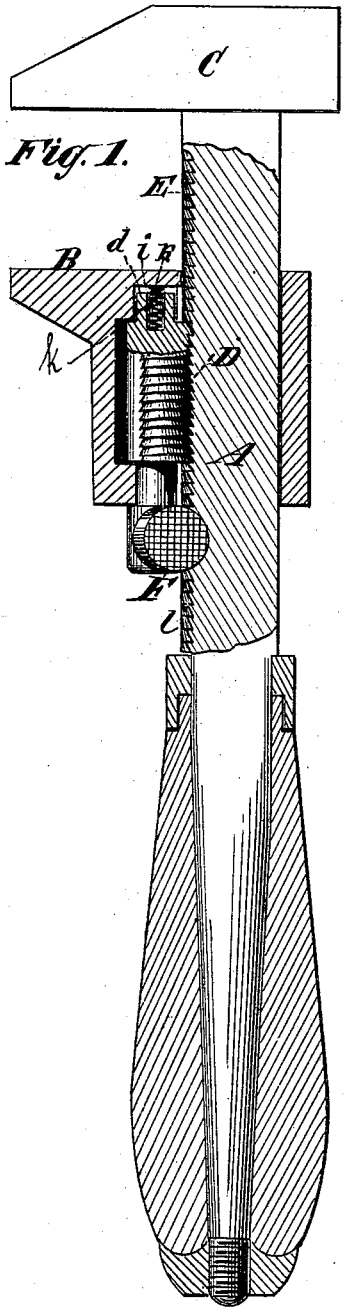


Fig. 3.

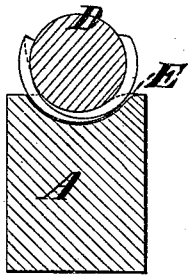


Fig. 4.

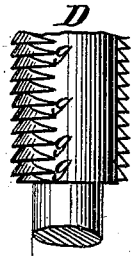
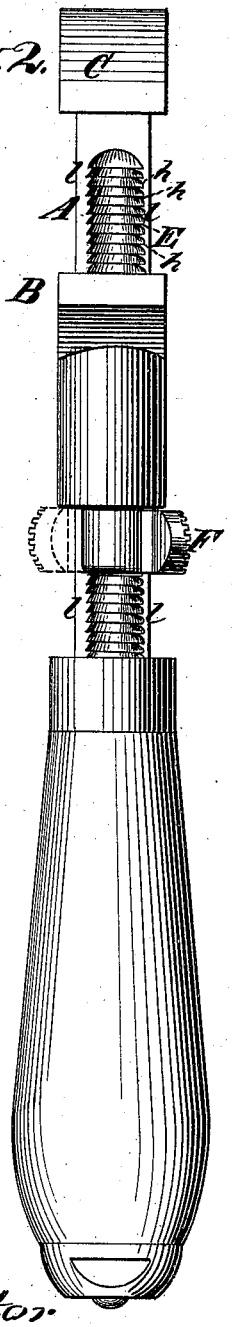


Fig. 2.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN MONKEY-WRENCHES.

Specification forming part of Letters Patent No. **195,173**, dated September 11, 1877; application filed August 15, 1877.

To all whom it may concern:

Be it known that we, ALBERT A. SANBORN and CHARLES BURROUGHS, both of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Monkey-Wrenches; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to that class of monkey-wrenches in which the movable jaw is held in position by a mutilated male screw or grooved cylinder carried by such movable jaw, and engaging a mutilated female screw, or a rack formed in or on the bar of the wrench, which male screw or grooved cylinder, when turned into one position, allows the movable jaw to slide freely in the bar, and when turned into another position firmly locks the said movable jaw, and holds the same for application to a nut or bolt-head for turning or screwing the same.

The object of this invention is to remove the difficulties hitherto pertaining to such wrenches, and to render them much more convenient and durable.

One of the objections to such wrenches, as heretofore constructed, is, that the mutilated screw or grooved cylinder is liable to turn by the action of gravity or inertia, and either lock or unlock the movable jaw in certain positions of the wrench—a serious inconvenience, and one which renders the use of such a wrench by one hand impracticable in many cases. This difficulty is wholly obviated by our invention.

Figure 1 in the accompanying drawings represents a partial side view and a partial longitudinal section of a wrench constructed in accordance with our invention. Fig. 2 is a face view of the same. Fig. 3 is a cross-section of the bar of the wrench and the mutilated male screw. Fig. 4 is a detail view of a portion of the mutilated male screw.

A is the bar of the wrench; B, the movable jaw, and C the fixed jaw.

D represents the mutilated male screw, which is placed in a recess, and in suitable bearings *d* in the movable jaw, the said mutilated screw being carried by the said movable jaw.

E is the mutilated female screw with which the said mutilated male screw engages, as hereinafter described.

The said mutilated male screw D projects out from the movable jaw B on the side of said jaw nearest the handle of the wrench, and is provided with a thumb-piece, F, by which the said screw D is turned to the right or to the left. When the said screw D is turned to the left it is disengaged from the female screw E, and the movable jaw is permitted to slide freely on the bar A; and when turned in the opposite position the two screws are engaged, and the movable jaw is locked in the position to which it is adjusted.

It is obvious that the same effect of locking and unlocking may be effected with a rack on the wrench-bar, and a tongued-and-grooved cylinder substituted for the mutilated screw; but the mutilated screws are preferred, as, in the locking, they press the movable jaw toward the object to be grasped by the wrench, and therefore cause the wrench to fit such object more accurately.

The obstruction caused by the abutment of the ends of the threads of the mutilated male screw against the ends of the threads of the mutilated female screw is obviated in our invention by beveling or tapering off the ends of the threads of the male screw on the entering side of said screw, as shown in Fig. 4, at *g*, and also tapering off the ends of the threads of the female screw on the same side, to give their terminations an edge form, as shown at *h* in Fig. 2. This not only secures the certain and easy entrance of the mutilated locking-screw, but also acts to push the movable jaw toward the nut, and to assist in taking up any play that, in the ordinary use of such wrenches, causes the wrench to injure the sharp edges of finished nuts.

To prevent the turning of the mutilated locking-screw in handling the wrench, which, in the use of such wrenches, has hitherto caused them to lock or to unlock the movable jaw in certain positions, we form a cylindrical recess, *i*, in the end of the screw D, and place therein a friction-spring, *k*, having sufficient

strength to hold said screw from turning by its gravity or its inertia in the handling of the wrench, but not so strong as to prevent the easy turning of said screw by the thumb, as hereinbefore described. Said spring, pressing upon the said male screw, produces enough friction upon the bearings of said screw to prevent turning of the same except when turned by the operator.

The wrench-bar is constructed with smooth bearings *l*, which lie parallel to each other, one on each side of the mutilated female screw. These ribs or bearings form the limit of the threads in the bar, and greatly strengthen the wrench, which, otherwise constructed as described, forms a cheap, durable, and very convenient tool.

We claim—

The combination, with the movable jaw of a monkey-wrench and a mutilated male screw carried by said jaw for locking the same to the bar of the wrench, of a friction-spring for holding said screw from turning except as turned by the operator, substantially as and for the purpose specified.

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