C. E. BILLINGS.
Wrench.

No. 212,298. Patented Feb. 18, 1879.

Fig. 1.

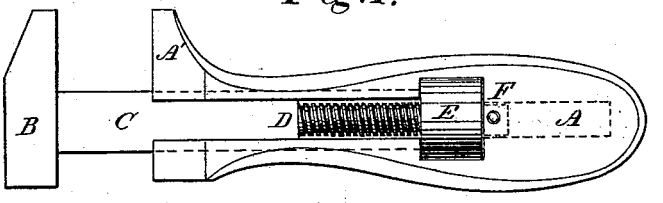


Fig. 2.

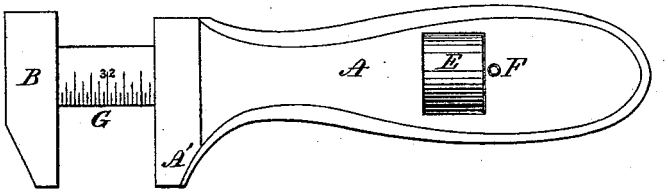
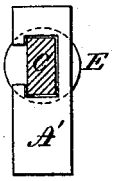


Fig. 3.



Witnesses.

Norman W. Eayrs.

Wilmot Horton

Inventor.

Charles E. Billings

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UNITED STATES PATENT OFFICE.

CHARLES E. BILLINGS, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN WRENCHES.

Specification forming part of Letters Patent No. **212,298**, dated February 18, 1879; application filed November 25, 1878.

To all whom it may concern:

Be it known that I, CHARLES E. BILLINGS, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Wrenches; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My invention relates to adjustable screw-wrenches, such as are commonly known by the name of "monkey-wrenches," adapted for turning different-sized nuts or heads of screws.

My invention has for its object the construction of a stronger and simpler hand-wrench than has heretofore been in use.

My invention consists in the construction which will be hereinafter described.

In the accompanying drawings, Figures 1 and 2 show views from opposite sides of my improved wrench. Fig. 3 is a view of the jaw end of the handle with the sliding jaw removed.

A is the part forming the handle of the tool. It is provided with a projection, A′, which forms one of the jaws of the wrench.

B is the movable jaw, which fits against the jaw A′ when closed, and which is attached to the sliding bar C, for moving it out or in for different openings. D is a screw-thread upon the inner end of the bar C, upon which is the thumb-nut E, held in a slot in the handle, so that by turning it the bar C is forced out or in, or held in position, as desired.

The bar C slides in a rectangular socket in the handle A as far as to the thumb-nut E, which is inserted laterally through a somewhat larger rectangular opening. Beyond this is a cylindrical hole for the screw D when the jaws are closed, as shown by dotted lines in Fig. 1.

F is a pin, inserted into the end of the screw after it is passed through the nut E, for the purpose of preventing the screw from being again withdrawn by the turning of the nut. This pin is put in through suitable small holes in the handle, as shown in the drawings.

The difficulty of forming a longitudinal rectangular slot in the solid handle leads me to the construction with the open side, as shown in Fig. 1. This permits of a milling-tool of suitable form, having its shank passing out through the side opening, being used to cut the slot, thus forming it with great facility and cheapness. The round hole for the screw is easily bored from the end, and the rectangular slot for the nut is cut straight through the handle.

For the purpose of readily adjusting the opening of the jaws to any desired distance, I provide a measuring-scale, G, upon the side of the bar C, as shown in Fig. 2 of the drawings, where it is divided into thirty-seconds of an inch. This permits of placing the jaws in their proper position for use before applying the wrench instead of adjusting by trial, as is ordinarily done.

What I claim as my invention is—

The combination of the solid handle A, the screw-bar C D, sliding in said handle, the thumb-nut E, and the pin F, substantially as herein described.

CHARLES E. BILLINGS.

Witnesses:

THEO. G. ELLIS,

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